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Gas Househeating

Survey: 1988

41st Annual Survey
Gas Utility Industry
United States

Househeating Customers, 1988

Conversions and New Housing, 1988-1989

Househeating Market Shares by Utility Company, 1988

Competitive Fuel Prices, 1988

Gas Heating Bills, 1988

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INTRODUCTION

This year's report is the 41st Annual Gas Houscheating Survey conducted by the American Gas Association.

The data published in this report highlight two trends that confirm a continuing shift to natural gas from electricity: (1) natural gas' market share of all new residential construction (single and multi-family) again exceeded electricity -- 51 percent versus 42 percent; and (2) conversions from electricity to gas in existing homes maintained the dramatic growth pattern of the past five years, increasing to 48,452 units or 26 percent of all conversions to gas.

The data collected for 1988, as well as projected data for 1989, provide a unique and comprehensive portrait of the residential gas market. Detailed information is presented by state and region, including customers, fuel prices, anticipated inventory additions from new homes, and conversions from alternate fuels. Company-specific data reported in this publication are unavailable in any other format.

A total of 139 gas utility companies responded to this year's survey. The response rate shows a consistent year-to-year level of company participation. The respondent companies represented the vast majority of the nation's residential gas customers, i.e., some 92 percent in 1988. The information provided by these utilities was expanded to obtain the state and national totals shown in Tables 3 and 5. Individual company data are listed by region and state in Appendices 1, 2 and 3. Please note that some tabular data may not add to totals due to rounding.

The American Gas Association wishes to thank those companies who participated in the survey for making this publication possible.

I. Executive Summary

Residential gas housing growth was relatively strong in 1988. Unit additions and market shares were stable or up while conversions were up considerably, even as the number of housing starts and completions declined for the second year in a row. Gas continues to perform well against electricity for market share in new housing.

▪Total conversions of existing units from alternative fuels to gas househeating were just over 185,000 in 1988, 19 percent higher than last year's level. Based on A.G.A. survey data, 106,000 or 57 percent of all heating conversions, were from fuel oil to gas, 49,000 (26%) were from electricity, 16,000 (9%) from LPG, and 14,000 (8%) from "other fuels" (coal, wood, etc.).

▪Electric conversions have grown rapidly for the fifth consecutive year. Natural gas conversions from electricity were up another dramatic 35 percent in 1988 after a robust 30 percent increase in 1987.

▪Natural gas improved its market share in new housing, while the U.S. housing construction market slowed down. For the third year in a row gas heated single family home completions showed a greater market share than electricity. According to U.S. Census data the ratio was extended to 54 percent compared to 37 percent, while last year it was 52 percent versus 40 percent. Similarly, in the multi-family sector, the gas share increased to 44 percent and the electric share decreased to 53 percent. Total new housing completions declined by 8 percent to 1.53 million in 1988. Gas' overall market share of new housing completions increased to 51 percent in 1988 from 48 percent in 1987. The overall electric share again dropped, by 3 points to 42 percent.

▪Gas househeating unit additions from new construction numbered 702,045, a 3 percent decrease from 1987, with only the South showing an increase (5%). The addition of new gas househeating units from conversions of existing units and new housing combined brought the total to 887,284 in 1988, up 1 percent from last year.

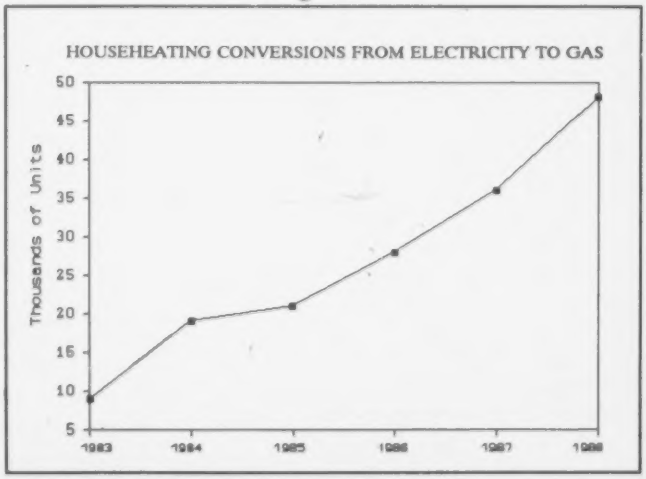
▪There were 48.6 million residential gas customers by year-end 1988, a net increase of 1.8 percent over 1987. Househeating customer saturation was down slightly at 88.0 percent. (Number of customers with gas heat divided by number of total customers).

▪Average year-end gas prices increased 2.5% in 1988. The price increases ranged from 1 percent to 8 percent. The exception was the East South Central division which showed a 2 percent decrease or $0.09/MMBtu. Average annual heating bills increased in seven census divisions, due to both the price increases and higher degree days compared to last year. The heating bills increased an average 5.4%.

▪Gas utilities expect to add approximately 176,000 conversions in 1989, which is nearly the same level as last year's projection. The 1989 projections for gas househeating additions from newly constructed units are about 7 percent higher than actual 1988 at 750,927 units. This is significant given the downward projection for total new housing starts.

▪In single family dwellings, gas consumption for househeating was 73.8 Mcf, while base load consumption was 32.0 Mcf. By comparison the average multi-family dwelling unit (2-4 units per dwelling) consumed 52.2 Mcf and 28.5 Mcf for househeating and base load use, respectively.

Figure 1



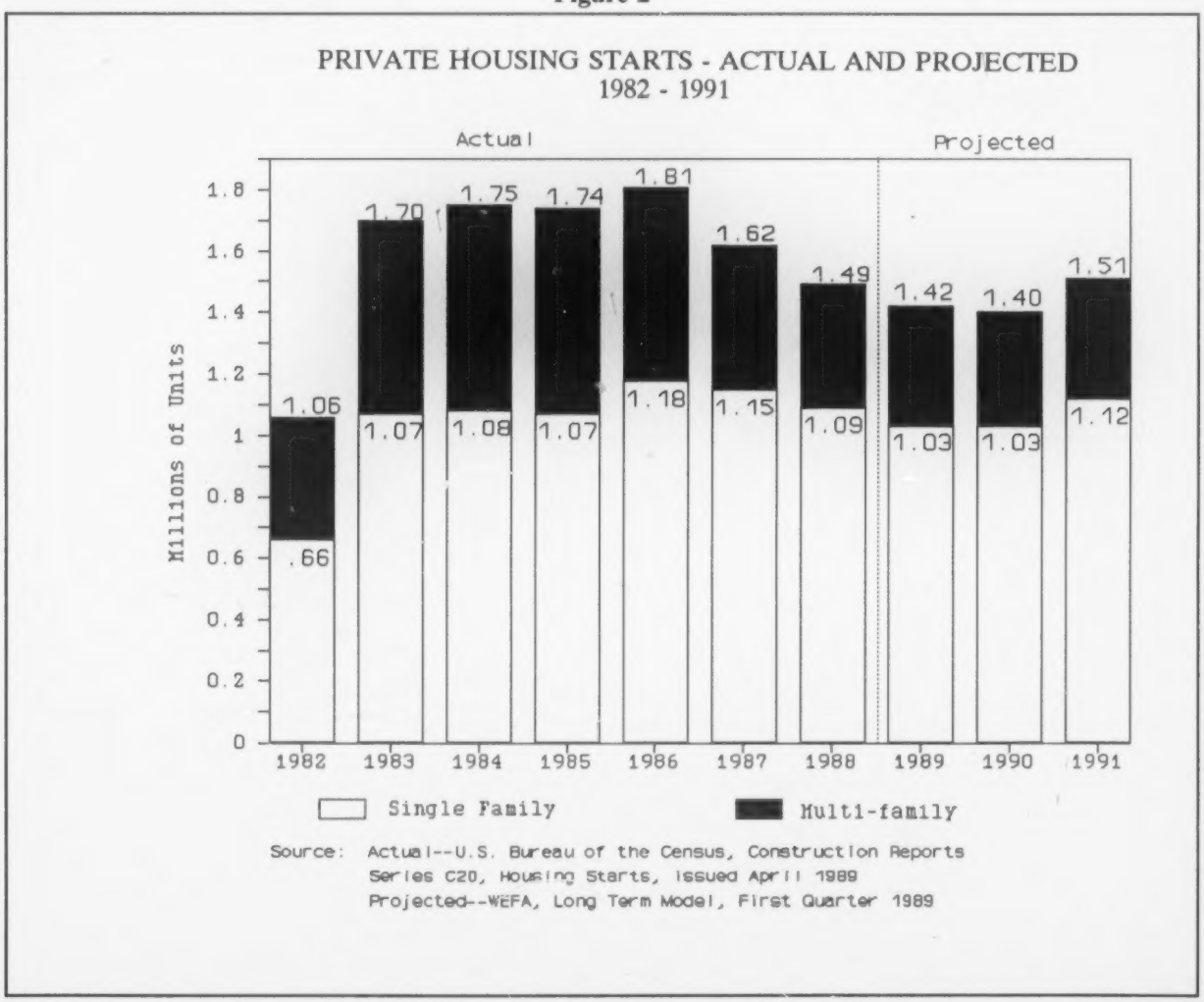
II. United States Housing Market In 1988

New Housing - Starts

The number of new private housing starts (seasonally adjusted) in 1988, 1.49 million units, was 8 percent lower than the 1987 level of 1.62 million units, but well above the 1.06 million units in 1982 (see Figure 2). The decrease from 1987 is due to equal declines in multi-family starts and single family starts of about 60,000 units. All four U.S. regions showed a decline.

Wharton Econometric Forecasting Associates (WEFA) predicts that 1989 private housing starts will average 1.42 million units. WEFA expects the housing market to then decline again the next year, with starts nearing 1.40 million in 1990 before rising again to 1.51 million in 1991. The reason for this short-run decline is a combination of demographics (fewer baby-boomers), higher costs for new homes, high vacancy rates in the multi-family sector and the negative impact of tax reform on investments in multiple-unit housing.

Figure 2



New Housing - Completions

The natural gas industry continued to gain market share at the expense of electricity as new gas completions in 1988 not only outnumbered new electric completions in the single family home market, but also accounted for more than half of all completions.

New gas single family completions increased slightly to 587,000 (See Table 1). Thus, the gas share increased to 54 percent of single family home completions, while the electric share dropped to 37 percent. Figure 3 shows how the gap has narrowed and then crossed over between gas and electric single family home completions since 1981.

Natural gas also showed relative strength in the multi-family completions market. New gas multi-family completions increased market share in 1988 to 44%. In contrast, electric multi-family completions market share decreased to 53 percent. Both fuels showed an absolute decline in 1988 multi-family completions. Electricity declined by 68,000 units, while gas declined by 26,000 units.

Overall, natural gas improved its share of combined single and multi-family completions in 1988 to 51 percent, up from 48 percent in 1987 and 43 percent in1986. Combined single and multi-family electric completions declined to 42 percent from 45 percent in 1987 and 51 percent in 1986.

Only in the South did new electric heated completions among single family homes outnumber gas heated completions. However, as has been the trend, the difference was smaller in 1988, 118,000, compared with a difference of 148,000 in 1987 and 182,000 in 1986. Gas completions in the South actually increased by 10,000 units, while electric completions declined. In the multi-family sector gas completions also outnumbered electric in three regions. Again, the South showed a declining margin (98,000) in electric heated completions compared to gas.

Figure 3

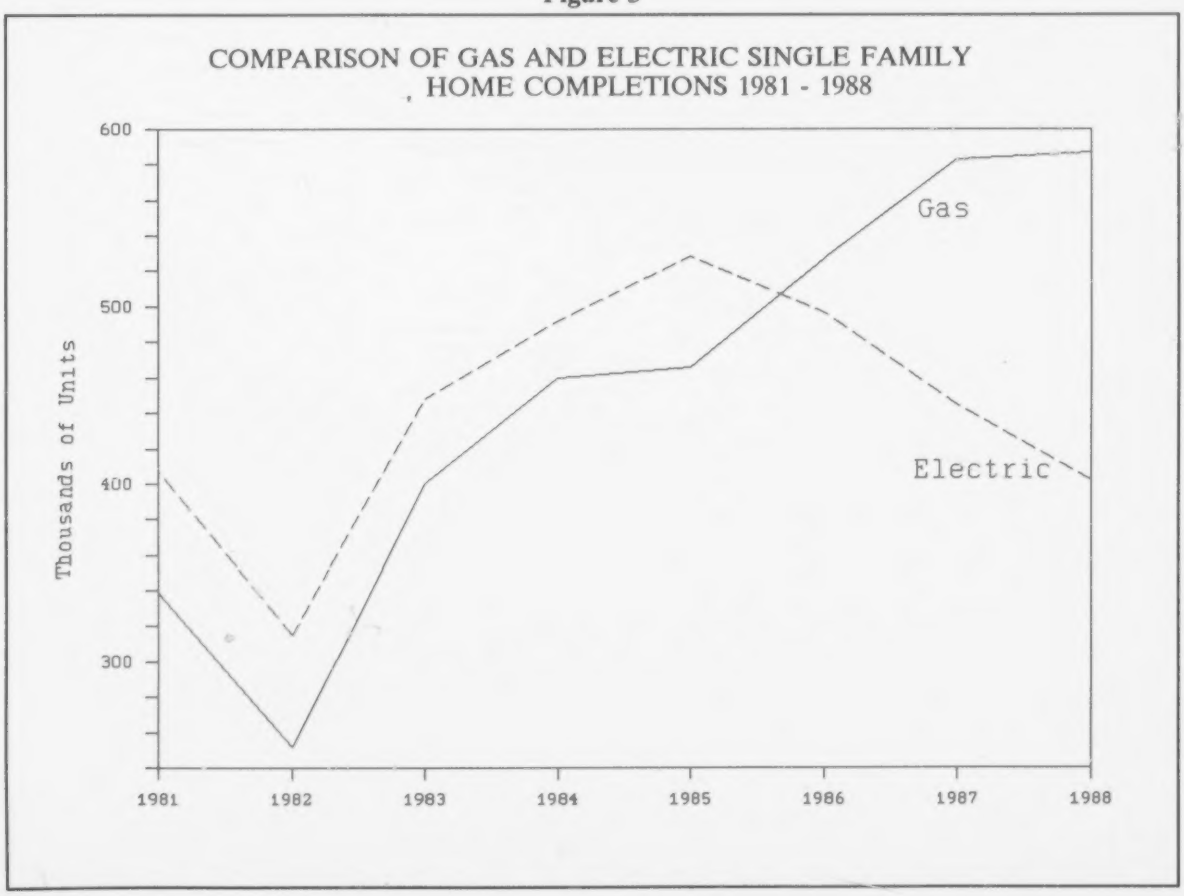


Table 1

1988 PRIVATE HOUSING COMPLETIONS - BY HEATING FUEL
(Thousands of Units)

Single Family	Share	Units	Northeast	Midwest	South	West
Gas[a]	54%	587	85	162	164	176
Electricity	37%	402	43	22	282	53
Oil	6%	60	57	B	3	B
Other	3%	36	3	6	8	18
Subtotal	100%	1085	188	191	457	248
Multi-Family						
Gas[a]	44%	196	40	56	20	80
Electricity	53%	238	18	32	118	70
Oil	1%	4	3	Z	Z	Z
Other	2%	7	1	1	Z	5
Subtotal	100%	445	62	89	138	156
Total		1530	250	280	595	404

[a]Includes liquefied petroluem gas.
B insufficient sample size
Z = less than 500 units

Source: U.S. Bureau of the Census, Characteristics of New Housing: 1988, Construction Reports C25-88-14, July 1989.

Existing Housing

The U.S. Energy Information Administration's Residential Energy Consumption Survey (RECS) provides the most up-to-date estimate of the market share by heating fuel for the total existing housing inventory. The RECS survey makes a rigorous attempt to distinguish secondary heating fuel(s) from main heating fuel. The results are basically consistent with data from earlier surveys. As shown in Table 2, the U.S. market share for gas as a main heating fuel is 56%. The electric share is perhaps down slightly from earlier years, while the other category is up slightly. Gas is most dominant in the Midwest region with a 74 percent market share. In the Northeast the main source of competition is fuel oil, while in the South it is electricity.

Table 2

MAIN HEATING FUEL BY CENSUS REGION, AS OF NOVEMBER 1987
(Millions of Occupied Households[a])

	Units	Share
United States	89.8	
Gas	50.0	56%
Electric	17.9	20
Oil[b]	12.2	14
Other[c]	9.8	11
Northeast	19.0	
Gas	8.1	43%
Electric	2.1	11
Oil[b]	7.7	41
Other[c]	0.6	3
Midwest	22.3	
Gas	16.6	74%
Electric	1.4	6
Oil[b]	1.5	7
Other[c]	2.6	12
South	30.7	
Gas	13.5	44%
Electric	10.6	35
Oil[b]	2.8	9
Other[c]	4.3	14
West	17.8	
Gas	11.8	66%
Electric	3.8	21
Oil[b]	Q	Q
Other[c]	1.8	10

[a] Units include both single and multi-family, but not unheated units. Totals may not add due to rounding.

[b] Oil includes kerosene. Regional data do not add to U.S. total due to insufficient responses for some components.

[c] Other includes LP gas, wood, and other. Regional data do not add up to U.S. total due to insufficient responses.

Q Inadequate data to allow tabulation.

Source: Residential Energy Consumption Survey (RECS): Housing Characteristics 1987, EIA, May 1989.

III. Residential Gas Customers in 1988

Total Residential Customers

With net year-end customer additions of 865,350, the total number of residential gas customers reached 48.6 million in 1988, a 1.8 percent increase over 1987 (see Table 3). The South, with 323,795 new customers, accounted for 37 percent of all new residential customer additions. The Midwest, West and Northeast regions accounted for 25 percent, 21 percent and 17 percent of additions, respectively. Most utilities define a customer as a single meter; hence, there are fewer customers than housing units.

Househeating Customers

About 42.8 million customers, 88.0 percent of all 1988 residential gas customers, were househeating customers. The gas househeating total residential gas customer ratio, i.e., market saturation, was down slightly from 1987. Househeating customer net additions totaled 614,381 in 1988, which is up 1.5 percent from last year. Net additions included existing gas base load customers who converted their non-gas heating system to gas, as well as customers added through new construction and conversions from alternative fuels.

Gas Househeating Unit Additions

The gas industry added 887,284 househeating units in 1988, a 1 percent increase from 1987. Of total additions, 702,045 were from new housing, a decrease in new units of 5 percent from 1987. New units were also added from conversions of existing households to gas heat. Figure 4 shows the new househeating unit additions for each of the nine census divisions in 1988. Due to definitional differences these data are not directly comparable with the Census data in Table 1. Three regions showed a decline in additions from new housing. In contrast, the South showed an increase in new housing additions of 6,710 units. It was the increase in conversions which enabled total new additions to exceed the level of last year.

Figure 4

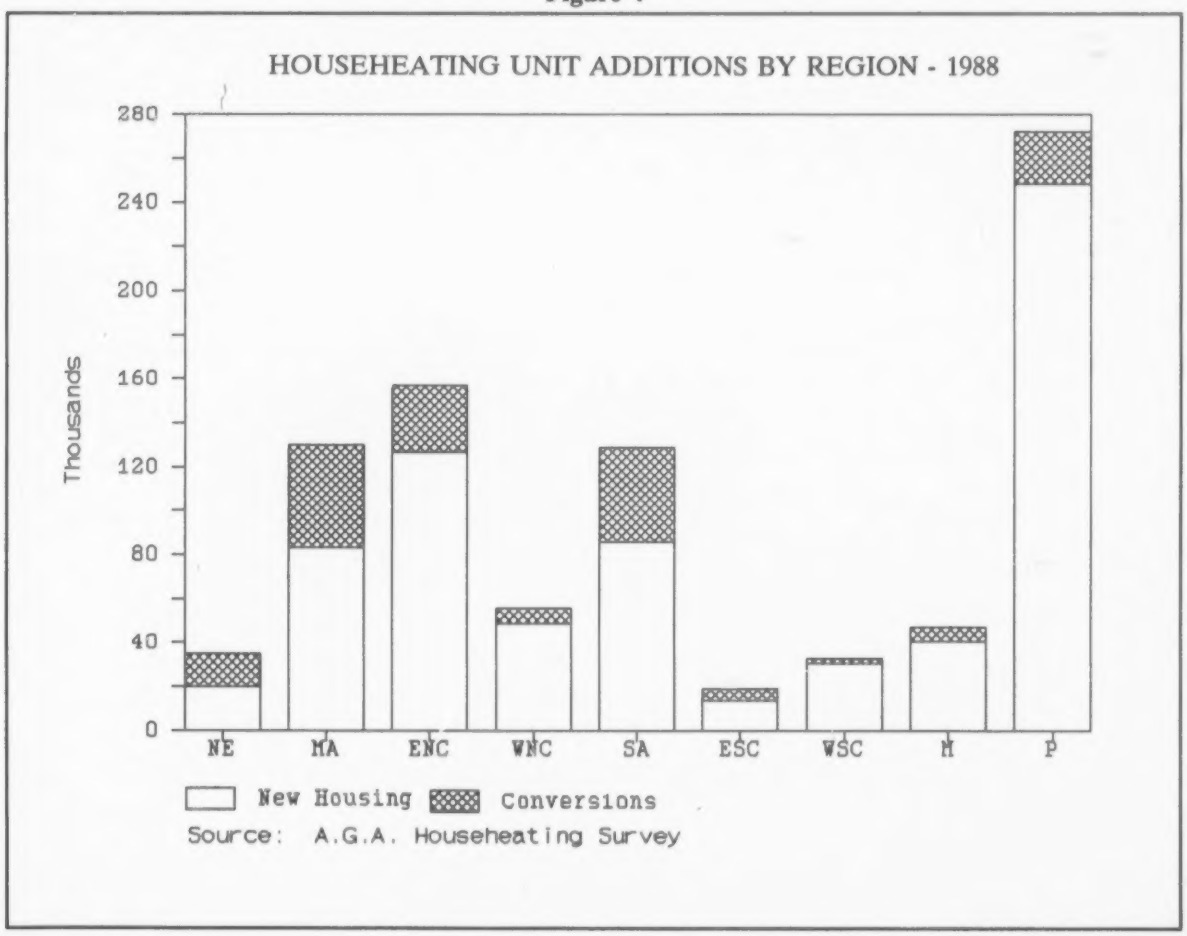


TABLE 3

RESIDENTIAL AND HOUSEHEATING CUSTOMERS OF GAS UTILITIES
AND 1988 HOUSEHEATING UNIT ADDITIONS,
BY STATE, AS OF DECEMBER 31, 1988

Region, Division and State	Residential Customers			1988 Househeating Unit Additions from New Housing and Conversions				
	TOTAL	HOUSE HEATING	PERCENT HEATING	TOTAL (100%)	NEW HOUSING NUMBER	(%)	CONVERSIONS NUMBER	(%)
United States	48,643,007	42,820,652	88.0%	887,284	702,045	79.1%	185,240	20.9
NORTHEAST	9,918,978	6,669,209	67.2%	173,077	106,433	61.5%	66,644	38.5
New England	1,830,275	1,290,552	70.5%	43,414	23,735	54.7%	19,679	45.3
Connecticut	423,306	291,408	68.8%	11,861	7,882	66.5%	3,978	33.5
Maine	12,455	5,338	42.9%	a	a	a	a	a
Massachusetts	1,116,872	777,984	69.7%	25,236	11,639	46.1%	13,597	53.9
New Hampshire	64,514	53,855	83.5%	a	a	a	a	a
Rhode Island	193,569	144,629	74.7%	5,103	3,656	71.6%	1,447	28.4
Vermont	19,559	17,338	88.6%	1,214	558	46.0%	656	54.0
Middle Atlantic	8,088,703	5,378,657	66.5%	129,663	82,698	63.8%	46,965	36.2
New Jersey	1,949,035	1,362,416	69.9%	61,784	40,548	65.6%	21,236	34.4
New York	3,856,700	2,021,463	52.4%	37,532	23,613	62.9%	13,919	37.1
Pennsylvania	2,282,968	1,994,778	87.4%	30,348	18,537	61.1%	11,810	38.9
MIDWEST	14,898,608	14,234,508	95.5%	213,523	176,233	82.5%	37,290	17.5
East North Central	10,751,270	10,191,678	94.8%	157,041	127,163	81.0%	29,879	19.0
Illinois	3,194,448	2,861,757	89.6%	46,320	44,023	95.0%	2,297	5.0
Indiana	1,249,560	1,214,183	97.2%	9,314	8,859	95.1%	456	4.9
Michigan	2,517,618	2,450,324	97.3%	41,542	34,780	83.7%	6,762	16.3
Ohio	2,708,586	2,663,299	98.3%	35,782	27,977	78.2%	7,805	21.8
Wisconsin	1,081,058	1,002,116	92.7%	24,083	11,524	47.9%	12,559	52.1
West North Central	4,147,338	4,042,830	97.5%	56,481	49,070	86.9%	7,411	13.1
Iowa	695,122	668,508	96.2%	1,972	1,568	79.5%	404	20.5
Kansas	737,447	733,640	99.5%	6,271	6,268	100.0%	3	a
Minnesota	907,611	866,611	95.5%	22,259	18,348	82.4%	3,911	17.6
Missouri	1,202,784	1,185,825	98.6%	20,294	18,716	92.2%	1,578	7.8
Nebraska	416,782	409,669	98.3%	4,722	3,561	75.4%	1,161	24.6
North Dakota	83,987	79,955	95.2%	a	a	a	a	a
South Dakota	103,605	98,623	95.2%	964	609	63.2%	355	36.8

INTENTIONAL
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SOUTH	11,970,245	10,597,378	88.5%	181,163	130,399	72.0%	50,764	28.0
South Atlantic	4,262,275	3,623,340	85.0%	129,335	85,671	66.2%	43,664	33.8
Delaware	84,800	63,023	74.3%	2,230	1,920	86.1%	310	13.9
District of Columbia	132,399	103,469	78.1%	2,649	130	4.9%	2,518	95.1
Florida	415,544	345,178	83.1%	25,020	8,260	33.0%	16,760	67.0
Georgia	1,262,421	1,239,819	98.2%	40,635	40,635	100.0%	a	a
Maryland	763,344	622,735	81.6%	7,544	5,108	67.7%	2,436	32.3
North Carolina	478,828	462,486	96.6%	26,551	11,307	42.6%	15,243	57.4
South Carolina	268,321	237,246	88.4%	4,182	1,059	25.3%	3,123	74.7
Virginia	504,175	423,437	84.0%	19,690	16,462	83.6%	3,228	16.4
West Virginia	352,442	125,947	35.7%	834	788	94.5%	46	5.5
East South Central	2,205,710	2,073,433	94.0%	18,794	13,983	74.4%	4,811	25.6
Alabama	672,823	603,184	89.6%	6,579	4,349	66.1%	2,230	33.9
Kentucky	607,980	589,489	97.0%	2,671	2,467	92.4%	203	7.6
Mississippi	392,900	365,130	92.9%	3,889	2,688	69.1%	1,201	30.9
Tennessee	532,007	515,630	96.9%	5,655	4,478	79.2%	1,177	20.8
West South Central	5,502,261	4,900,605	89.1%	33,034	30,745	93.1%	2,289	6.9
Arkansas	486,063	439,437	90.4%	1,582	1,582	100.0%	a	a
Louisiana	909,297	662,641	72.9%	698	518	74.2%	180	25.8
Oklahoma	806,008	786,875	97.6%	7,164	6,690	93.4%	474	6.6
Texas	3,300,894	3,011,652	91.2%	23,590	21,956	93.1%	1,634	6.9
WEST	11,855,176	11,319,557	95.5%	319,522	288,980	90.4%	30,542	9.6
Mountain	2,953,295	2,819,340	95.5%	47,278	40,646	86.0%	6,632	14.0
Arizona	564,543	477,517	84.6%	6,573	5,675	86.3%	898	13.7
Colorado	970,479	970,358	100.0%	9,835	9,835	100.0%	a	a
Idaho	110,903	108,844	98.1%	2,582	1,510	58.5%	1,072	41.5
Montana	169,288	158,358	93.5%	177	100	56.2%	78	43.8
Nevada	236,183	206,096	87.3%	10,110	8,077	79.9%	2,033	20.1
New Mexico	360,691	360,691	100.0%	5,482	5,000	91.2%	481	8.8
Utah	434,115	434,115	100.0%	12,048	9,978	82.8%	2,070	17.2
Wyoming	107,092	103,360	96.5%	471	471	100.0%	a	a
Pacific	8,901,881	8,500,217	95.5%	272,244	248,334	91.2%	23,910	8.8
Alaska	a	a	a	a	a	a	a	a
California	8,175,113	7,826,200	95.7%	231,415	230,144	99.5%	1,271	0.5
Hawaii	a	a	a	a	a	a	a	a
Oregon	297,673	272,372	91.5%	11,178	4,991	44.6%	6,187	55.4
Washington	429,095	401,645	93.6%	29,651	13,198	44.5%	16,452	55.5

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a
Insufficient Data
Regional totals may not add due to rounding.

Househeating Conversions

In 1988, 185,185 housing units were converted from an alternative fuel to natural gas (see Table 4), an increase of more than 19 percent compared with last year's level of conversions. The respondents were asked to provide a breakdown of conversions by fuel type. Based on these data, 106,480 units, or 57 percent, were conversions from fuel oil to gas. The share of fuel oil conversions has dropped from 83 percent in 1983. Electricity conversions increased by 35 percent in 1988 to 48,669 units. Propane conversions increased by 17 percent to 15,978. Consequently, electricity and propane accounted for 26 percent and 9 percent of total conversions, respectively, while other (coal, wood, and non-classified) more than doubled to 14,057 (8 percent).

Table 4

HOUSEHEATING CONVERSIONS TO NATURAL GAS IN 1988 BY TYPE OF FUEL

	Oil		Propane		Electricity		Other		Total	
Region	Units	%	Units	%	Units	%	Units	%	Units	%
United States	106,480	57.5	15,978	8.6	48,669	26.3	14,057	7.6	185,185	100.0
New England	18,890	96.0	336	1.7	434	2.2	19	0.1	19,679	10.6
Middle Atlantic	38,981	83.0	469	1.0	4,204	9.0	3,311	7.0	46,965	25.4
East North Central	15,119	50.6	3,695	12.4	5,582	18.7	5,483	18.4	29,879	16.1
West North Central	3,562	48.1	3,328	44.9	500	6.7	21	0.3	7,411	4.0
South Atlantic	18,013	41.3	1,262	2.9	22,982	52.6	1,406	3.2	43,664	23.6
East South Central	11	0.2	1,294	27.2	3,318	69.8	133	2.8	4,756	2.6
West South Central	0	0.0	1,143	49.9	1,146	50.1	0	0.0	2,289	1.2
Mountain	936	14.1	2,606	39.3	1,901	28.7	1,189	17.9	6,632	3.6
Pacific	10,968	45.9	1,845	7.7	8,601	36.0	2,496	10.4	23,910	12.9

[a]Other includes coal, wood, and non-classified conversions.

[b]Totals differ from Table 3 due to slightly different sample sizes.

The actual number of 1988 conversions exceeded the forecast of 144,820 made by responding companies in 1987. This increase over the consistently sustained level of 150,000 conversions per year the past three years is the result of a rapidly growing share of conversions from electricity and an increase in conversions from other sources, such as wood and kerosene. Figure 5 shows the trend in total conversions since 1970. Figure 6 shows how the share of electric conversions among all conversions to gas has grown dramatically since 1981 from a negligible level to over one quarter of all conversions.

Approximately 89 percent of the conversions were in four of the nine census divisions of the country--the Middle Atlantic, East North Central, South Atlantic, Pacific and New England divisions. The South Atlantic division showed the greatest increase with conversions increasing by nearly 21,000 units. Electricity accounted for 85 percent of this increase in the South Atlantic.

Figure 5

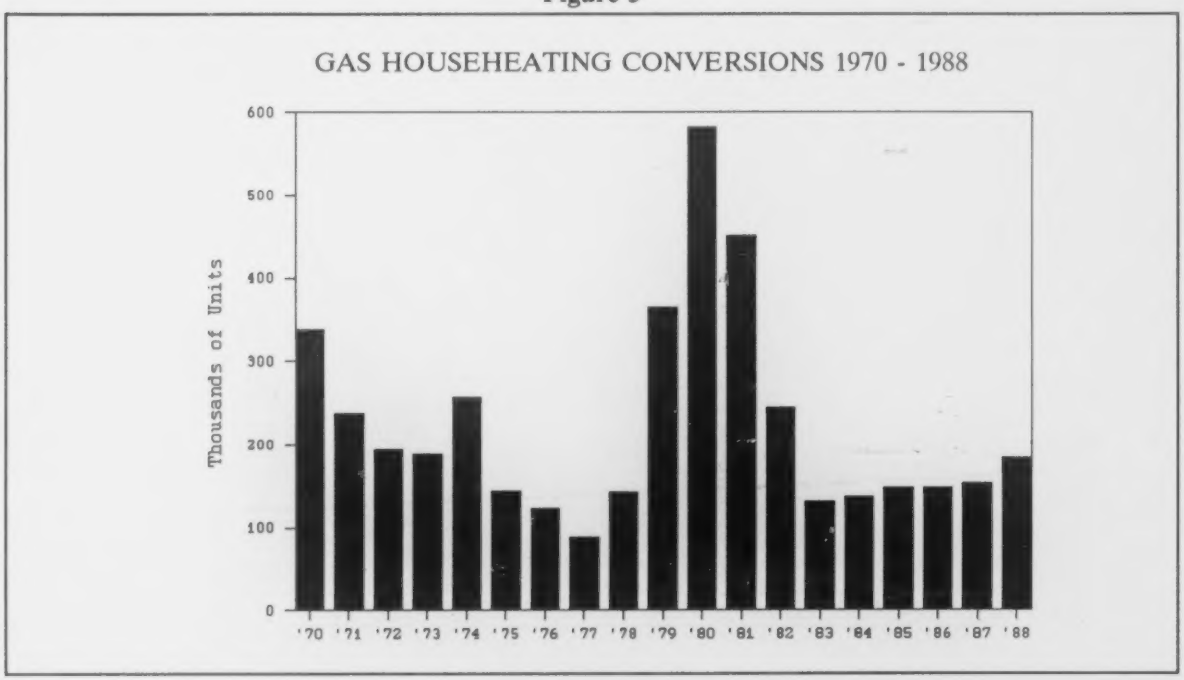
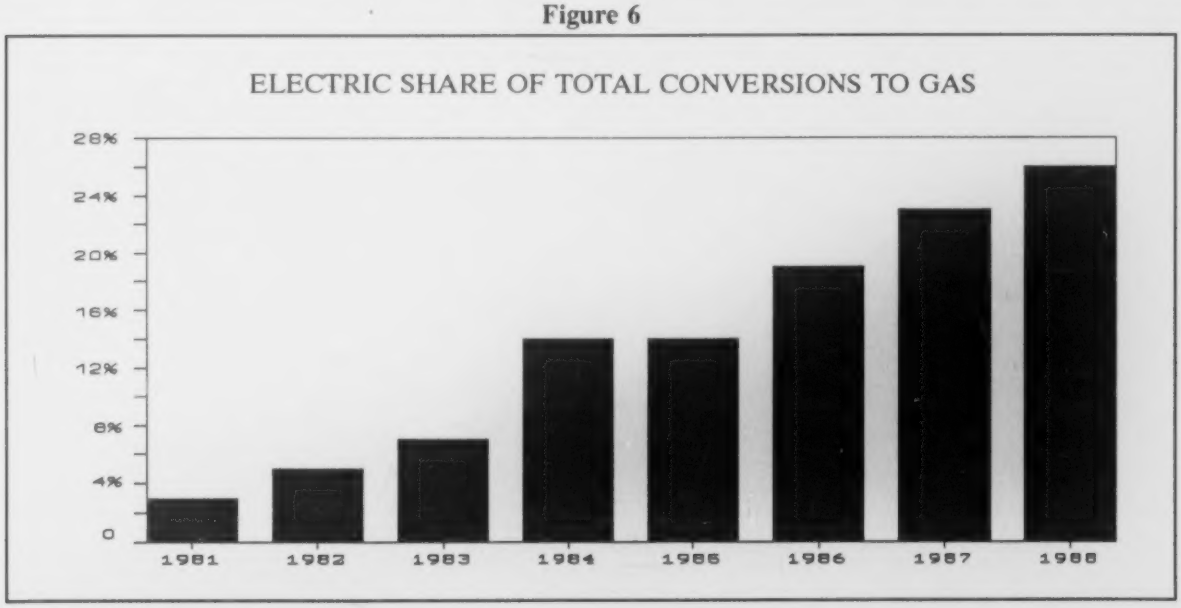


Figure 6



As part of the survey, respondents were asked to project additions to the househeating inventory from both new construction and conversions for 1989 (see Table 5). The results indicate that utilities expect to add approximately 175,924 conversions, or slightly below the actual 1988 level. New househeating additions in 1988 are projected to be about 751,000. If this projection for 70 percent more gas househeating additions from newly constructed units bears out, it will be versus two consecutive years of declining housing starts.

Market Share

According to this year's househeating survey, the estimated market share for gas heating (as a percentage of total estimated housing units within the service areas of responding gas utilities) ranged from 37 percent to 89 percent regionally. The estimated market share as reported by each responding gas utility can be found in Appendix 1. The map in Figure 7 shows the estimated market share in the nine census divisions. The highest heating market share for natural gas is in the West North Central division (89%). The lowest market shares are in the New England (37%), Middle Atlantic (56%) and South Atlantic (47%) divisions, where oil heating is traditionally most prevalent.

Figure 7

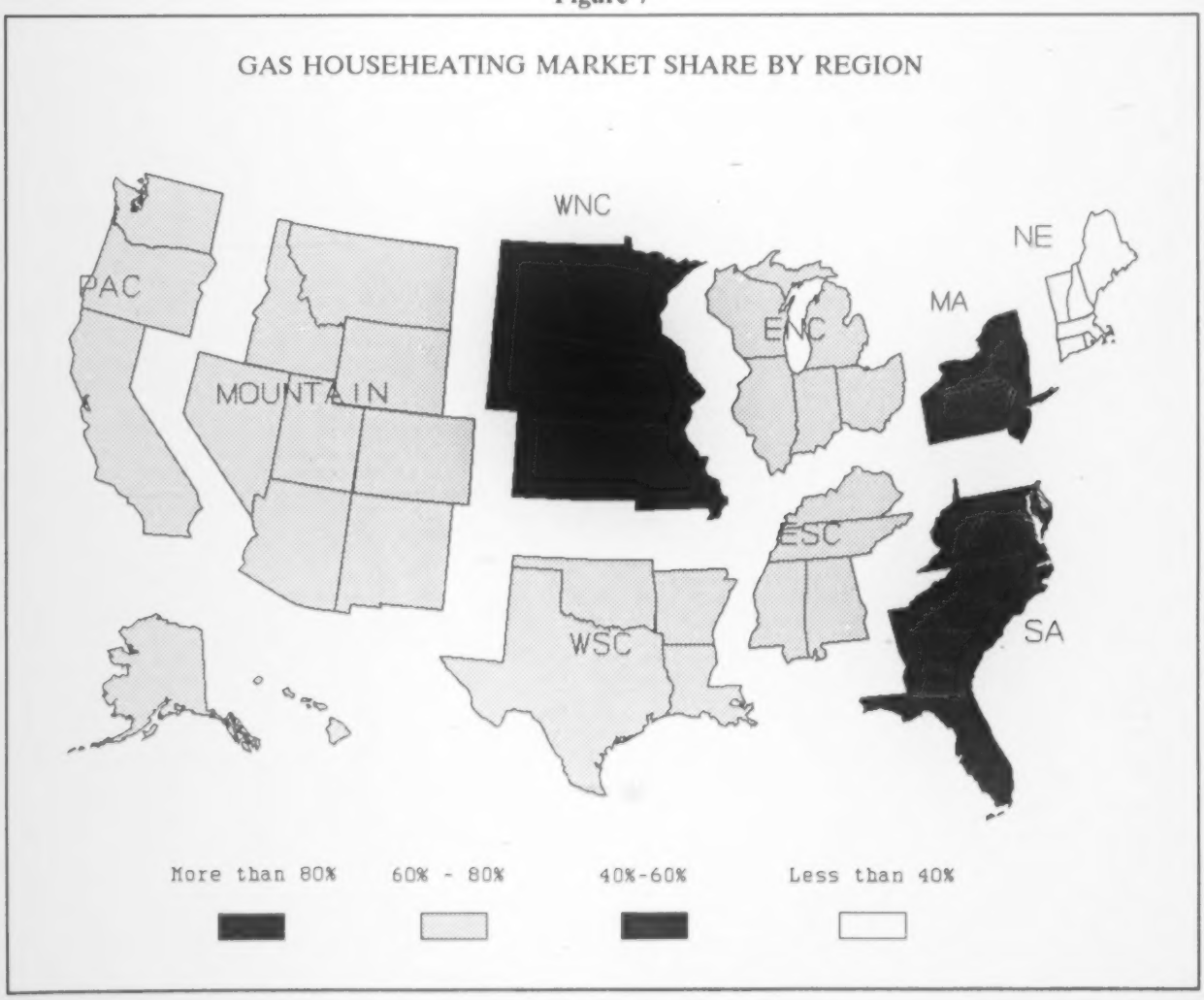


Table 5
1989 ANTICIPATED ADDITIONS
OF GAS HOUSEHEATING UNITS

Region, Division, and State	Total (100%)	New Housing Number	New Housing (%)	Conversions Number	Conversions (%)
United States	926,851	750,927	81.0%	175,924	19.0%
NORTHEAST	154,660	95,945	62.0%	58,715	38.0%
New England	29,959	16,134	53.9%	13,825	46.1%
Connecticut	9,710	6,575	67.7%	3,135	32.3%
Maine	a	a	a	a	a
Massachusetts	15,307	6,409	41.9%	8,898	58.1%
New Hampshire	a	a	a	a	a
Rhode Island	3,872	2,650	68.4%	1,222	31.6%
Vermont	1,070	500	46.7%	570	53.3%
Middle Atlantic	124,701	79,811	64.0%	44,890	36.0%
New Jersey	58,800	39,290	66.8%	19,510	33.2%
New York	35,525	22,470	63.3%	13,055	36.7%
Pennsylvania	30,376	18,051	59.4%	12,325	40.6%
NORTH CENTRAL	178,677	147,915	82.8%	30,762	17.2%
East North Central	139,644	114,550	82.0%	25,094	18.0%
Illinois	43,575	41,350	94.9%	2,225	5.1%
Indiana	8,978	8,211	91.5%	767	8.5%
Michigan	34,406	31,053	90.3%	3,353	9.7%
Ohio	30,345	22,250	73.3%	8,095	26.7%
Wisconsin	22,340	11,686	52.3%	10,654	47.7%
West North Central	39,033	33,365	85.5%	5,668	14.5%
Iowa	1,118	1,025	91.7%	93	8.3%
Kansas	6,020	6,020	100.0%	a	a
Minnesota	19,415	15,690	80.8%	3,725	19.2%
Missouri	8,000	7,000	87.5%	1,000	12.5%
Nebraska	3,550	3,150	88.7%	400	11.3%
North Dakota	a	a	a	a	a
South Dakota	930	480	51.6%	450	48.4%
SOUTH	280,133	229,426	81.9%	50,707	18.1%
South Atlantic	131,870	88,481	67.1%	43,389	32.9%
Delaware	2,025	1,800	88.9%	225	11.1%
District of Columbia	2,300	300	13.0%	2,000	87.0%
Florida	23,800	6,000	25.2%	17,800	74.8%
Georgia	41,141	41,141	100.0%	a	a
Maryland	8,430	6,680	79.2%	1,750	20.8%
North Carolina	26,879	11,885	44.2%	14,994	55.8%
South Carolina	4,125	1,100	26.7%	3,025	73.3%
Virginia	21,520	18,325	85.2%	3,195	14.8%
West Virginia	1,650	1,250	75.8%	400	24.2%
East South Central	14,860	9,915	66.7%	4,945	33.3%
Alabama	6,110	3,625	59.3%	2,485	40.7%
Kentucky	3,280	2,790	85.1%	490	14.9%
Mississippi	3,970	2,900	73.0%	1,070	27.0%
Tennessee	1,500	600	40.0%	900	60.0%
West South Central	133,403	131,030	98.2%	2,373	1.8%
Arkansas	a	a	a	a	a
Louisiana	103,185	102,900	99.7%	285	0.3%
Oklahoma	8,730	8,130	93.1%	600	6.9%
Texas	21,488	20,000	93.1%	1,488	6.9%
WEST	313,381	277,641	88.6%	35,740	11.4%
Mountain	41,276	32,506	78.8%	8,770	21.2%
Arizona	8,850	7,600	85.9%	1,250	14.1%
Colorado	10,691	10,691	100.0%	a	a
Idaho	2,525	1,391	55.1%	1,134	44.9%
Montana	190	100	52.6%	90	47.4%
Nevada	7,670	5,700	74.3%	1,970	25.7%
New Mexico	a	a	a	a	a
Utah	11,340	7,014	61.9%	4,326	38.1%
Wyoming	10	10	100.0%	a	a
Pacific	272,105	245,135	90.1%	26,970	9.9%
Alaska	a	a	a	a	a
California	228,880	227,675	99.5%	1,205	0.5%
Hawaii	a	a	a	a	a
Oregon	10,750	4,550	42.3%	6,200	57.7%
Washington	32,475	12,910	39.8%	19,565	60.2%

[a]Insufficient data.

IV. Residential Gas Consumption

Gas Consumption Per Unit

Respondents to the survey estimated the average annual gas consumption for both single and multi-family dwellings. Utilities representing 87 percent of all gas househeating customers responded to this portion in the survey. These responses were then used to develop the U.S. and regional average estimates on per unit gas use. Both categories were weighted by the number of residential gas customers for each responding utility in each state. In addition, the multi-family data represented a weighted average of dwellings with 2-4 units, and dwellings with 5 or more units (see Table 6).

Due to changes in the reporting methods of some utilities, particularly in the definition of base load and multi-family gas use and consumption per unit (as well as annual changes in heating degree day totals), consumption data from year to year are not always comparable. With this caveat in mind, a review of 1988 combined average consumption data (U.S. average weighted by customer and dwelling type) indicated that total per unit gas consumption was 86.8 Mcf for all units, while househeating was 58.2 Mcf and base load consumption was 28.6 Mcf. This represents a 3 percent increase over last year for househeating, which is consistent with the fact that heating degree days were up nationally for 1988, by 6.7%. In single family dwellings, gas consumption for househeating was 73.8 Mcf, while base load consumption was 32.0 Mcf. By comparison the average multi-family dwelling unit in buildings with 2-4 units consumed 52.2 Mcf and 28.5 Mcf, respectively, for househeating and base load use. In dwellings with more than 5 units, gas consumption per unit for househeating was 42.5 Mcf and base load consumption per unit was 23.9 Mcf.

Climatic conditions have the most significant impact on gas use for househeating purposes, but the size and thermal integrity of the structure must also be considered. Reflecting these factors, single family unit consumption was highest for househeating in the Northeast region at 99.9 Mcf and lowest in the West at 44.3 Mcf. Gas consumption for househeating in multi-family dwellings with 2-4 units followed a similar pattern with per unit consumption in the Northeast region at 86.7 Mcf, with a low of 25.5 Mcf in the West region.

Table 6 includes weather data for each region in the form of annual heating degree days for calendar year 1988 and the 30-year normal heating degree days. The degree-day data are weighted by gas househeating customers.

Gas consumption for base load use, which primarily includes water heating, cooking, clothes drying and air conditioning, will vary with the size and type of appliance in the unit. Base load consumption also has some seasonality reflecting lifestyle preferences under the various climatic conditions. For single family dwellings, base load consumption was lowest in the West region at 25.9 Mcf, and highest in the Northeast region at 40.4 Mcf. Base load consumption per unit for multi-family dwellings of 2-4 units ranged from 25.6 Mcf in the Midwest to 36.4 Mcf in the Northeast.

Table 6

1988 AVERAGE ANNUAL GAS CONSUMPTION/UNIT[a] BY REGION (Mcf)

Region	Single Family	Multi-Family 2-4 Units	Multi-Family 5+ Units	Combined[b] Average	Heating Degree Days[c] 1988	30-Year
Northeast						
Heating	99.9	86.7	75.6	89.9	5,669	5,635
Base load	40.4	36.4	31.6	36.8		
Total	140.3	123.1	107.2	126.7		
Midwest						
Heating	97.9	69.9	54.0	76.9	6,243	6,292
Base load	34.0	25.6	20.5	27.6		
Total	131.9	95.5	74.5	104.5		
South						
Heating	54.8	43.0	38.9	46.5	2,835	2,894
Base load	28.0	27.8	25.9	27.3		
Total	82.8	70.8	64.8	73.8		
West						
Heating	44.3	25.5	19.5	30.7	2,143	2,402
Base load	25.9	26.6	21.0	24.6		
Total	70.2	52.1	40.5	55.3		
U.S. Average						
Heating	73.8	52.2	42.5	58.2	4,257	4,242
Base load	32.0	28.5	23.9	28.6		
Total	105.8	80.7	66.4	86.8		

[a]Results for 1988 are based on responses from 171 different markets.

[b]Weighted by customer and dwelling type.

[c]Calendar year heating degree days as reported are then weighted by gas househeating customers (see Appendix 1 for detailed definitions). The 30-year normal are also weighted by gas househeating customers as opposed to total population.

Conservation

Conservation, measured as the total percentage decline in consumption per househeating customer not explained by the weather, has reduced consumption to an average of 26.7 percent below the pre-1973 level. This is a little below the 1987 level and consistent with slightly higher consumption per unit over 1987. Conservation percentages reported by each company were weighted by househeating customer data from each company to derive regional and national conservation estimates. The magnitude of conservation ranged from a high of 35.2 percent below the pre-1973 level of consumption in the Pacific division to a low of 20.3 percent in the New England division (see Table 7).

With regard to base load conservation, most companies indicated that base load consumption per customer had moderated since 1973--mostly through the introduction of more efficient appliances, lower water heater settings, water heater insulation, and pilotless ignitions. However, fewer than 30 companies responded with quantitative data describing base load conservation.

Prices

Natural gas prices increased in eight of the nine census divisions in 1988. The largest increases, depicted in Table 8, were registered in the South Atlantic division which increased $0.40/MMBtu from $5.84/MMBtu or 6.9 percent and in the Mountain division, which increased $0.37/MMBtu from $4.82/MMBtu. The only decline in gas price was in the East South Central division which showed a decrease of $0.09/MMBtu. Overall, the average U.S. gas price increased from $5.18/MMBtu to $5.31/MMBtu or 2.5 percent. This compares favorably to an increase of $0.71/MMBtu to $21.26/MMBtu or 3.5 percent in the average U.S. price of electricity. In contrast, fuel oil prices showed a decline of 5.6%, to $5.16/MMBtu. Propane prices decreased by 6.4% to $8.44/MMBtu.

Table 7

1988 AVERAGE CONSERVATION BY REGION
(Percent Decline From 1973 Baseline)

Region	Conservation[a] (%)
Northeast	23.1
New England	20.3
Middle Atlantic	23.7
Midwest	27.7
East North Central	27.6
West North Central	27.9
South	22.5
South Atlantic	21.1
East South Central	21.7
West South Central	23.7
West	30.6
Mountain	35.2
Pacific	29.7
United States	26.7

[a]The total percent decline in consumption normalized for weather from the pre-embargo 1973 baseline. Results for 1988 are based on individual company responses from 118 different markets and are weighted by househeating customers.

Table 8

RESIDENTIAL FUEL PRICE COMPARISONS[a]
($/MMBtu)

DIVISION	1987	1988	% Change
United States			
Gas	5.18	5.31	2.5%
Electricity	20.55	21.26	3.5%
Propane	9.02	8.44	-6.4%
Fuel Oil	5.47	5.16	-5.6%
New England			
Gas	6.52	6.85	5.0%
Electricity	24.21	23.64	-2.4%
Propane	10.40	10.72	3.1%
Fuel Oil	6.02	5.50	-8.7%
Middle Atlantic			
Gas	5.81	5.91	1.7%
Electricity	21.50	22.13	3.0%
Propane	10.85	10.03	-7.5%
Fuel Oil	5.67	5.65	-0.2%
East North Central			
Gas	5.17	5.26	1.8%
Electricity	18.48	19.78	7.0%
Propane	8.18	7.76	-5.1%
Fuel Oil	5.54	5.40	-2.4%
West North Central			
Gas	4.30	4.46	3.7%
Electricity	18.36	18.75	2.2%
Propane	6.26	6.45	2.9%
Fuel Oil	4.81	4.28	-11.1%
South Atlantic			
Gas	5.84	6.24	6.9%
Electricity	18.83	18.68	-0.8%
Propane	9.27	9.50	2.5%
Fuel Oil	5.40	5.29	-2.0%
East South Central			
Gas	4.84	4.75	-1.9%
Electricity	15.73	16.66	5.9%
Propane	8.53	8.71	2.1%
Fuel Oil	4.30	5.11	18.7%
West South Central			
Gas	4.98	5.13	3.2%
Electricity	21.51	18.55	-13.7%
Propane	7.67	7.93	3.4%
Fuel Oil	4.01	4.58	14.3%
Mountain			
Gas	4.82	5.19	7.6%
Electricity	22.61	22.35	-1.1%
Propane	9.06	6.55	-27.7%
Fuel Oil	3.71	3.97	6.8%
Pacific			
Gas	4.99	5.04	1.0%
Electricity	23.28	25.96	11.5%
Propane	12.71	10.14	-20.3%
Fuel Oil	7.02	5.76	-18.0%

[a]Represents final price to consumers, including sales taxes. Weighted by househeating customers.

Heating Bills

Strongly correlated with the natural gas price is the annual gas househeating bill for a single family home shown in Table 9. This measure increased in six of the nine divisions. These increases ranged from 3.8 percent in the South Atlantic division to 8.9 percent in the East North Central division. Nationally, the average gas househeating bill increased from $372 to $392 or about 5 percent.

Table 9

1987 AND 1988 GAS HOUSEHEATING BILLS BY DIVISION[a]

Division	1987 Gas Heating Bills	1988 Gas Heating Bills	% Change
United States	$371.92	$391.88	5.4%
New England	$622.01	$584.31	-6.1%
Middle Atlantic	$561.25	$609.32	8.6%
East North Central	$491.15	$534.94	8.9%
West North Central	$363.35	$389.36	7.2%
South Atlantic	$351.57	$365.04	3.8%
East South Central	$312.18	$329.18	5.4%
West South Central	$243.02	$238.03	-2.1%
Mountain	$318.12	$296.35	-6.8%
Pacific	$192.61	$203.11	5.5%

[a]Weighted by househeating customers.

APPENDIX 1

1988 HOUSEHEATING CUSTOMER AND CONSUMPTION DATA BY COMPANY

This appendix presents gas househeating data obtained from a survey of 139 companies on a regional, state and company-by-company basis. Column 1 of the Appendix shows reported residential and househeating customers. Residential and househeating customer data in the 1988 survey have been reconciled with the A.G.A. Uniform Statistical Reports, which form the basis of the A.G.A. Gas Facts publication. A gas customer is equal to a meter for billing purposes, while a househeating unit refers to the number of actual residences which use gas for space heating. Column 2 provides heating and average base load consumption per customer. Column 3 shows the gas heating market share, defined as the percentage of total dwelling units in the franchise areas of gas utilities that are served by gas for househeating as opposed to other primary heating fuels.

The market share should not be confused with househeating saturation, which is the number of gas househeating customers on a given system. It should also be noted that reported market share figures, in particular, may be inconsistent in some cases due to different interpretations for an individual utility from year to year. This question was revised in 1981 so that data reported in subsequent years may remain consistent. Column 4 shows the number of heating degree days (a heating degree day is a measure of the coldness of the weather, based on the extent to which the daily mean temperature falls below a reference temperature, usually 65° F).

APPENDIX 1 -- CUSTOMERS AND CONSUMPTION

DIVISION / STATE / COMPANY	RESIDENTIAL CUSTOMERS YEAR-END 1988	HOUSEHEATING CUSTOMERS YEAR-END 1988	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) HEATING	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) BASELOAD	GAS-HTG MKT. SHARE VS. ALL FUELS	HEATING DEGREE DAYS 1988	HEATING DEGREE DAYS 30 YEAR NORMAL
NEW ENGLAND							
CONNECTICUT							
NORTHEAST UTILITIES	153,865	108,617	69.3	30.0	33.0%	6,310	6,113
CONNECTICUT NATURAL GAS	125,451	94,488	84.0	35.0	44.0%	6,527	6,208
SOUTHERN CONNECTICUT GAS CO.	136,737	83,310	84.6	25.5	27.0%	5,761	5,501
MAINE							
NORTHERN UTILITIES	12,600	5,400	89.0	36.0	5.0%	7,980	8,070
MASSACHUSETTS							
COLONIAL GAS CO.	47,254	38,947	85.0	35.0	60.0%	6,434	6,562
COMMONWEALTH GAS CO.	202,116	168,010	120.0	30.0	42.0%	6,788	6,569
ESSEX COUNTY GAS CO.	32,120	24,593	112.0	26.0	44.0%	6,812	6,915
BOSTON GAS CO.	461,109	252,616	106.0	36.0	37.0%	5,796	5,698
LOWELL GAS CO.	55,829	51,237	95.0	45.0	55.0%	6,652	6,457
BAY STATE GAS CO.	206,300	157,800	89.0	36.0	38.0%	7,205	6,930
FALL RIVER GAS CO.	39,427	34,128	100.0	30.0	NA	6,202	6,049
NEW HAMPSHIRE							
NORTHERN UTILITIES	11,500	9,600	89.0	36.0	14.0%	7,030	7,250
RHODE ISLAND							
PROVIDENCE GAS CO.	131,849	98,390	90.0	30.0	43.6%	5,831	5,938
VALLEY GAS CO.	47,511	35,623	75.0	20.0	45.0%	6,500	6,465
VERMONT							
VERMONT GAS SYSTEMS	16,616	14,729	100.0	30.0	NA	7,534	7,876
MIDDLE ATLANTIC							
NEW JERSEY							
PUBLIC SERVICE ELECTRIC & GAS	1,285,079	833,396	105.0	35.0	64.0%	4,988	4,990
SOUTH JERSEY GAS CO.	186,755	157,213	76.4	29.3	26.0%	4,933	4,482
ELIZABETHTOWN GAS CO.	204,432	132,914	86.0	33.9	65.0%	5,048	4,965
NEW JERSEY NATURAL GAS COMPANY	272,769	238,893	93.3	33.7	50.0%	5,260	5,255
NEW YORK							
ORANGE & ROCKLAND UTILITIES	92,584	87,443	111.0	43.0	56.0%	6,355	5,947
BROOKLYN UNION GAS CO.	1,061,254	366,006	97.0	45.0	52.0%	4,849	4,900
LONG ISLAND LIGHTING CO.	382,299	202,042	157.2	19.7	22.9%	5,008	5,333
NATIONAL FUEL GAS DIST.	470,977	454,398	95.7	37.7	84.1%	6,547	6,774
CENTRAL HUDSON GAS & ELECTRIC	48,442	34,745	61.0	50.0	15.2%	6,761	6,382
ROCHESTER GAS & ELECTRIC	234,816	210,710	94.1	34.4	NA	6,871	6,793
ST. LAWRENCE GAS CO.	10,372	9,492	134.0	25.0	82.0%	8,436	8,318
COLUMBIA GAS OF NEW YORK	60,828	55,985	100.0	35.0	78.7%	7,548	7,282
NIAGARA MOHAWK POWER CO.	417,360	340,526	92.8	53.2	81.0%	6,743	6,678
CONSOLIDATED EDISON CO.	932,638	184,047	125.0	83.0	49.7%	4,423	4,323
PENNSYLVANIA							
PENNSYLVANIA GAS & WATER	113,402	93,013	138.0	25.0	50.0%	6,525	6,301
UGI CORPORATION	194,294	129,026	88.1	25.9	25.2%	5,927	5,512
PEOPLES NATURAL GAS CO.	305,762	298,863	90.0	50.0	NA	5,985	5,983
PHILADELPHIA GAS WORKS	507,695	406,295	113.0	48.0	75.0%	4,579	4,600
PHILADELPHIA ELECTRIC CO.	305,621	239,022	90.0	28.0	32.7%	5,223	4,992
EQUITABLE RESOURCES	243,755	243,755	99.2	33.9	98.0%	5,985	5,950
NORTH PENN GAS CO.	28,838	28,751	83.0	39.0	NA	7,575	7,337
PIKE COUNTY LIGHT & POWER	918	861	100.0	44.0	29.0%	6,355	5,947
COLUMBIA GAS OF PA	311,955	296,889	98.0	32.0	68.5%	5,869	5,914
NATIONAL FUEL GAS DIST.	188,373	186,344	103.4	34.2	75.0%	6,305	6,575
EAST NORTH CENTRAL							
ILLINOIS							
NORTH SHORE GAS CO.	105,941	101,508	144.0	39.0	92.0%	6,645	6,455
NORTHERN ILLINOIS GAS CO.	1,465,405	1,408,291	123.0	32.0	88.0%	6,273	6,211
UNITED CITIES GAS CO.	19,185	19,185	NA	NA	NA	4,822	4,729
ILLINOIS POWER CO.	351,515	342,694	79.9	29.3	84.0%	5,174	5,519
PEOPLES GAS LIGHT & COKE	800,175	580,995	147.0	39.0	94.0%	6,626	6,455
IOWA-ILLINOIS GAS & ELECTRIC	58,334	56,213	85.2	32.9	78.0%	6,205	6,274
INDIANA							
CITIZENS GAS & COKE	212,670	204,654	92.0	36.0	75.0%	5,709	5,577
LAWRENCEBURG GAS CO.	3,811	3,708	100.0	40.0	NA	5,418	5,247
INDIANA GAS CO.	312,286	307,715	89.9	26.6	51.6%	5,639	5,650
OHIO VALLEY GAS CORP.	21,933	22,261	105.0	26.0	70.0%	5,813	5,801
NORTHERN INDIANA PUBLIC SERVICE	530,795	512,085	96.0	35.0	87.0%	6,470	6,371
KOKOMO GAS & FUEL CO.	26,906	26,597	95.3	24.1	80.0%	6,082	5,876
MICHIGAN							
MICHIGAN GAS CO.	70,405	69,503	92.8	25.4	59.4%	7,407	7,333
WISCONSIN PUBLIC SERVICE	4,441	4,259	91.0	28.0	NA	8,017	8,022
MICHIGAN GAS UTILITIES CO.	106,889	105,290	93.4	30.0	72.6%	6,803	6,574
MICHIGAN CONSOLIDATED GAS	1,002,539	971,806	110.0	45.0	85.0%	6,655	6,772

APPENDIX 1 -- CUSTOMERS AND CONSUMPTION

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	CONSUMERS POWER CO.	1,218,894	1,188,075	83.3	40.9	91.0%	6,856	6,817
OHIO								
	EAST OHIO GAS CO.	952,870	943,779	100.0	40.0	98.0%	6,307	6,289
	NATIONAL GAS & OIL CORP.	18,957	18,957	66.1	31.1	NA	6,690	6,089
	CINCINNATI GAS & ELECTRIC	281,927	260,349	100.0	40.0	NA	5,418	5,247
	OHIO GAS CO.	29,560	29,560	80.0	35.0	80.0%	6,496	6,350
	DAYTON POWER & LIGHT	252,167	249,125	88.5	31.0	NA	5,933	5,795
	COLUMBIA GAS OF OHIO	1,050,864	1,041,352	95.0	31.0	74.6%	6,048	6,013
	WEST OHIO GAS CO.	51,509	50,628	95.8	24.2	88.0%	5,864	5,943
WISCONSIN								
	WISCONSIN NATURAL GAS CO.	228,096	215,286	104.3	21.0	72.0%	7,231	7,454
	WISCONSIN SOUTHERN GAS CO.	38,189	37,067	88.0	28.0	NA	7,420	7,131
	WISCONSIN PUBLIC SERVICE	150,375	143,551	91.0	28.0	NA	8,017	8,022
	WISCONSIN GAS CO.	404,108	363,861	96.0	33.0	78.0%	7,124	7,317
	WISCONSIN FUEL & LIGHT CO.	37,173	35,604	89.9	26.5	75.0%	7,969	8,146
	SUPERIOR WATER, LIGHT & POWER	8,076	6,060	133.0	24.0	80.0%	9,943	9,900
	WISCONSIN POWER & LIGHT CO.	104,797	98,866	80.9	23.4	32.0%	7,585	7,642
	MADISON GAS & ELECTRIC	72,869	67,175	76.0	27.4	72.8%	7,504	7,642
WEST NORTH CENTRAL								
IOWA								
	IOWA PUBLIC SERVICE CO.	237,150	225,046	85.2	31.8	NA	6,280	6,554
	IOWA-ILLINOIS GAS & ELECTRIC	150,434	145,858	80.0	31.4	86.0%	6,501	6,505
	CEDAR FALLS UTILITIES	9,114	8,773	113.5	NA	76.0%	6,738	6,248
	IOWA ELECTRIC LIGHT & POWER	106,210	103,976	110.7	31.9	98.0%	7,186	7,013
KANSAS								
	K N ENERGY, INC.	23,014	22,554	80.0	36.0	NA	5,735	5,866
	ARKANSAS LOUISIANA GAS CO.	19,349	16,833	57.4	34.6	61.3%	4,678	4,787
	MIDWEST ENERGY, INC.	9,013	9,013	97.0	30.8	90.0%	5,344	5,300
	KPL GAS SERVICE	525,095	525,095	90.0	30.0	90.0%	5,050	5,319
MINNESOTA								
	IOWA PUBLIC SERVICE CO.	58,025	54,901	82.9	29.3	NA	7,847	7,966
	MINNEGASCO, INC.	429,508	420,315	130.0	35.0	82.1%	7,822	8,050
	NORTHERN STATES POWER CO.	238,148	222,558	101.3	17.9	NA	7,847	8,007
	CITY OF DULUTH	19,825	13,662	140.0	45.0	85.0%	9,894	9,901
	AUSTIN UTILITIES	8,693	8,693	125.0	2.5	98.0%	8,041	7,862
MISSOURI								
	CITY OF SPRINGFIELD	54,948	54,948	77.0	26.0	88.0%	4,440	4,364
	ASSOCIATED NATURAL GAS CO.	37,935	37,935	67.0	26.0	NA	3,879	3,944
	LACLEDE GAS CO.	548,736	533,889	70.3	40.1	80.0%	4,709	4,938
	KPL GAS SERVICE	411,353	411,353	90.0	30.0	90.0%	5,050	5,319
NEBRASKA								
	METROPOLITAN UTILITIES DISTRICT	131,725	128,957	75.0	40.0	84.0%	5,994	6,592
	KPL GAS SERVICE	3,097	3,097	90.0	30.0	90.0%	5,050	5,319
	MINNEGASCO, INC.	107,759	106,161	66.0	30.0	94.0%	5,633	6,127
	K N ENERGY, INC.	79,444	77,855	78.0	29.0	NA	5,735	5,866
	IOWA PUBLIC SERVICE CO.	3,474	3,375	75.9	29.1	NA	6,713	6,947
	HASTINGS UTILITIES	7,981	7,946	NA	NA	99.0%	5,474	5,911
	NORTHWESTERN PUBLIC SERVICE	32,539	32,382	78.0	39.0	99.5%	6,410	6,638
NORTH DAKOTA								
	MONTANA-DAKOTA UTILITIES CO.	63,140	60,109	86.3	25.3	95.2%	8,323	9,199
SOUTH DAKOTA								
	MONTANA-DAKOTA UTILITIES CO.	27,333	24,436	63.4	24.8	89.4%	6,512	7,301
	MINNEGASCO, INC.	37,186	36,967	81.0	32.0	90.0%	7,666	7,878
	IOWA PUBLIC SERVICE CO.	7,392	6,946	81.5	25.0	NA	6,713	6,947
	NORTHWESTERN PUBLIC SERVICE	25,812	24,674	88.0	29.4	99.5%	7,988	8,087
SOUTH ATLANTIC								
DELAWARE								
	CHESAPEAKE UTILITIES CORP.	10,428	7,838	89.0	29.0	NA	4,450	4,760
	DELMARVA POWER & LIGHT CO.	74,762	55,475	NA	28.1	37.0%	5,154	4,947
DIST. OF COLUMBIA								
	WASHINGTON GAS LIGHT CO.	132,399	103,469	92.0	31.0	73.0%	4,341	3,882
FLORIDA								
	PEOPLES GAS SYSTEM, INC.	148,665	123,491	25.0	24.0	38.0%	149	186
GEORGIA								
	UNITED CITIES GAS CO.	61,901	61,901	NA	NA	NA	2,297	2,356
	ATLANTA GAS LIGHT COMPANY	1,010,558	991,357	46.0	38.0	71.0%	2,715	2,857
MARYLAND								
	BALTIMORE GAS & ELECTRIC	482,011	354,688	84.2	40.6	37.8%	4,936	4,706
	WASHINGTON GAS LIGHT CO.	237,065	230,574	86.4	30.7	65.0%	4,395	3,897
	COLUMBIA GAS OF MD	26,139	22,683	88.0	26.0	45.0%	5,633	6,002

APPENDIX 1 -- CUSTOMERS AND CONSUMPTION

DIVISION / STATE / COMPANY	RESIDENTIAL CUSTOMERS YEAR-END 1988	HOUSEHEATING CUSTOMERS YEAR-END 1988	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) HEATING	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) BASELOAD	GAS-HTG MKT. SHARE VS. ALL FUELS	HEATING DEGREE DAYS 1988	HEATING DEGREE DAYS 30 YEAR NORMAL
NORTH CAROLINA							
NORTH CAROLINA NATURAL GAS	64,087	61,807	67.0	33.0	72.0%	NA	2,750
PIEDMONT NATURAL GAS CO.	185,512	185,512	80.1	17.0	28.0%	3,863	3,708
PUBLIC SERVICE OF NORTH CAROLIN	188,511	175,956	81.2	23.9	29.6%	3,680	3,337
CITY OF WILSON	6,294	5,962	66.2	NA	21.2%	NA	NA
SOUTH CAROLINA							
UNITED CITIES GAS CO.	3,816	3,816	NA	NA	NA	3,543	3,239
PEOPLES GAS CO. OF S.C.	7,610	NA	NA	NA	NA	2,992	2,669
PIEDMONT NATURAL GAS CO.	54,505	54,505	73.8	11.4	25.0%	3,620	3,420
COMMISSIONERS OF PUBLIC WORKS	10,139	8,939	50.0	10.0	48.0%	3,424	3,163
VIRGINIA							
ROANOKE GAS CO.	33,583	NA	NA	NA	NA	4,359	4,315
CITY OF DANVILLE	14,255	12,863	82.7	22.2	72.2%	3,938	3,856
UNITED CITIES GAS CO.	9,549	9,549	NA	NA	NA	4,626	4,615
VIRGINIA NATURAL GAS	166,652	140,323	47.0	42.0	40.0%	3,562	3,424
COLUMBIA GAS OF VA	40,102	39,160	78.0	28.0	37.8%	4,760	4,735
WASHINGTON GAS LIGHT CO.	197,032	187,846	80.1	26.2	54.0%	4,395	3,882
CITY OF RICHMOND	68,100	54,774	54.5	36.0	NA	4,232	3,993
WEST VIRGINIA							
HOPE GAS CO.	100,644	100,529	76.0	30.3	NA	5,538	4,957
MOUNTAINEER GAS CO.	180,669	NA	100.0	40.0	NA	5,613	5,402
EAST SOUTH CENTRAL							
ALABAMA							
CITY OF FLORENCE	7,881	7,881	NA	NA	60.0%	2,739	NA
CITY OF HUNTSVILLE	25,197	25,197	100.0	NA	65.0%	3,441	3,341
SOUTHEAST ALABAMA GAS	30,664	NA	65.5	29.6	NA	1,869	1,896
ALABAMA GAS CORP.	384,813	368,604	52.0	27.0	72.0%	2,592	2,585
DECATUR UTILITIES	4,751	4,706	49.0	11.0	24.0%	3,046	3,302
KENTUCKY							
LOUISVILLE GAS & ELECTRIC	221,539	219,965	73.0	33.0	78.0%	4,544	4,525
UNION LIGHT, HEAT & POWER	58,262	54,423	100.0	40.0	NA	5,418	5,247
COLUMBIA GAS OF KY	106,890	106,271	84.0	25.0	70.5%	4,956	4,772
DELTA NATURAL GAS CO.	25,344	25,344	65.0	25.0	NA	4,983	4,797
WESTERN KENTUCKY GAS CO.	131,077	120,591	81.0	19.0	35.0%	4,438	4,380
MISSISSIPPI							
ENTEX, INC.	97,438	97,324	40.0	26.7	90.1%	2,451	2,462
MISSISSIPPI VALLEY GAS CO.	216,010	207,922	64.9	31.2	90.8%	2,835	2,803
TENNESSEE							
NASHVILLE GAS CO.	69,244	67,000	85.0	30.0	32.0%	3,918	3,756
MIDDLE TENNESSEE NATURAL GAS	15,841	15,150	59.0	12.0	66.0%	3,918	3,696
MEMPHIS LIGHT, GAS & WATER	237,355	228,810	85.0	NA	76.0%	2,930	3,227
UNITED CITIES GAS CO.	50,483	50,483	NA	NA	NA	4,669	4,356
WEST SOUTH CENTRAL							
ARKANSAS							
ASSOCIATED NATURAL GAS CO.	17,565	17,565	64.0	25.0	NA	3,879	3,944
ARKANSAS WESTERN GAS CO.	69,639	70,353	55.0	37.0	47.0%	4,904	3,948
ARKANSAS LOUISIANA GAS CO.	362,644	315,500	54.3	32.3	51.7%	3,210	3,152
ARKANSAS OKLAHOMA GAS CORP.	34,177	34,177	65.0	32.0	NA	3,404	3,477
LOUISIANA							
LOUISIANA GAS SERVICE CO.	221,631	221,631	34.7	27.3	NA	NA	NA
TRANS LOUISIANA	60,652	58,600	60.0	NA	70.0%	2,065	1,961
ARKANSAS LOUISIANA GAS CO.	126,445	110,007	48.0	29.0	42.7%	2,275	2,269
ENTEX, INC.	117,761	101,863	40.0	25.0	68.0%	1,471	1,718
OKLAHOMA							
KPL GAS SERVICE	31,825	31,825	90.0	30.0	85.0%	5,050	5,319
ARKANSAS LOUISIANA GAS CO.	103,888	90,382	50.5	30.5	56.4%	3,608	3,735
ARKANSAS OKLAHOMA GAS CORP.	13,242	13,242	51.4	24.6	NA	3,404	3,477
OKLAHOMA NATURAL GAS CO.	584,385	583,245	63.6	31.0	87.0%	3,360	3,416
LONE STAR GAS CO.	32,019	28,497	45.0	27.0	52.0%	2,461	2,407
TEXAS							
LONE STAR GAS CO.	1,094,086	973,737	45.0	27.0	52.0%	2,461	2,407
CITY PUBLIC SERVICE	263,513	239,797	30.6	26.1	66.1%	1,491	1,606
ENTEX, INC.	963,292	905,005	32.0	26.0	80.0%	1,319	1,738
ARKANSAS LOUISIANA GAS CO.	42,119	25,229	45.6	27.4	44.4%	2,364	2,269
ENERGAS	253,494	243,464	65.0	33.0	80.0%	3,497	3,468
MOUNTAIN							
ARIZONA							
CITIZENS UTILITIES CO.	5,170	4,680	33.0	27.3	90.0%	2,463	2,721
SOUTHWEST GAS CORP.	476,383	402,640	28.9	26.8	50.0%	1,298	1,348

APPENDIX 1 -- CUSTOMERS AND CONSUMPTION

DIVISION / STATE / COMPANY	RESIDENTIAL CUSTOMERS YEAR-END 1988	HOUSEHEATING CUSTOMERS YEAR-END 1988	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) HEATING	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) BASELOAD	GAS-HTG MKT. SHARE VS. ALL FUELS	HEATING DEGREE DAYS 1988	HEATING DEGREE DAYS 30 YEAR NORMAL
COLORADO							
PUBLIC SERVICE OF COLORADO	735,237	735,237	92.6	32.8	75.0%	5,848	6,014
K N ENERGY, INC.	5,275	5,170	78.0	26.0	NA	6,345	6,801
CITY OF COLORADO SPRINGS	103,913	103,913	49.0	33.0	99.0%	6,300	6,364
IDAHO							
WASHINGTON WATER POWER	17,020	14,924	76.9	NA	25.0%	6,884	6,882
INTERMOUNTAIN GAS CO.	95,847	95,847	55.3	16.7	46.0%	6,155	6,448
MONTANA							
MONTANA-DAKOTA UTILITIES CO.	54,285	49,454	71.3	23.6	91.1%	6,668	7,514
GREAT FALLS GAS CO.	20,541	20,541	68.5	40.6	96.0%	6,843	7,650
NEVADA							
SOUTHWEST GAS CORP.	172,975	144,553	47.7	33.6	60.0%	4,198	4,387
WESTPAC UTILITLIES	63,208	61,543	47.7	22.7	63.0%	5,141	6,022
NEW MEXICO							
GAS COMPANY OF NEW MEXICO	303,173	303,173	NA	NA	NA	NA	NA
UTAH							
MOUNTAIN FUEL SUPPLY CO.	428,119	428,119	77.8	37.2	89.0%	5,680	5,882
WYOMING							
MOUNTAIN FUEL SUPPLY CO.	17,262	17,262	85.1	33.4	72.0%	8,529	8,352
MONTANA-DAKOTA UTILIT'ES CO.	10,627	9,522	79.8	26.6	89.6%	7,120	7,697
K N ENERGY, INC.	8,961	8,782	73.0	27.0	NA	7,331	7,594
PACIFIC							
CALIFORNIA							
PACIFIC GAS AND ELECTRIC	3,108,115	3,045,952	42.0	22.0	78.0%	1,415	1,763
SAN DIEGO GAS & ELECTRIC	615,664	659,339	19.0	24.0	70.0%	1,102	1,058
SOUTHERN CALIFORNIA GAS CO.	4,196,010	3,881,152	35.3	28.0	NA	1,350	1,304
SOUTHWEST GAS CORP.	69,366	61,736	41.9	26.3	83.0%	3,557	3,634
OREGON							
NORTHWEST NATURAL GAS CO.	258,816	236,817	51.9	24.1	28.0%	4,257	4,409
WASHINGTON							
WASHINGTON WATER POWER	57,372	55,589	92.0	NA	34.0%	6,884	6,882
WASHINGTON NATURAL GAS CO.	287,367	282,314	71.8	20.7	27.0%	NA	4,912
NORTHWEST NATURAL GAS CO.	6,804	6,226	47.5	24.1	7.0%	4,257	4,409
CASCADE NATURAL GAS CORP.	77,000	57,000	50.0	30.0	34.0%	5,224	5,640

APPENDIX 2

COMPETITIVE FUEL PRICES

The information in this section presents the average delivered price (as of December 31, 1988) of competitive fuels distributed to residential customers, gas' principal competition in each market, and the average annual gas heating bill. The gas heating bill is derived by multiplying the averaging heating consumption per single family home, as shown in Appendix 1, by the gas price shown in this appendix for each company. The data reflect prices in the principal city served within each company's franchise area. Regional fuel prices for competitive fuels are listed at the end of each division. Prices are expressed in dollars per million Btu for comparison.

The prices for natural gas represent househeating use only and exclude base load prices. Base load consumption includes all domestic uses of gas (e.g., ranges, water heaters, clothes dryers and air conditioning) except househeating. Moreover, base load prices are generally higher than househeating prices because utilities charge more per unit of energy for small monthly consumption (base load only) and less per unit of energy for large monthly consumption (base load plus winter heating use). The prices for electricity represent total electric use or the rate prevailing for 600 kWh per month and above. The following conversion factors were used to convert reported data to Btu.

Conversion Factors

Natural Gas	970 cubic feet/million Btu
Fuel Oil #2	7.194 gallons/million Btu
Electricity	293.083 kWh/million Btu
Propane	10.917 gallons/million Btu

Information marked "NA" represents data not available or fuel not distributed.

APPENDIX 2 -- COMPETITIVE FUEL PRICES

DIVISION / STATE / COMPANY	PRINCIPAL CITY SERVED	AS OF DECEMBER 31, 1988 NATURAL GAS	FUEL OIL	ELECTRIC	PROPANE PRICE	GAS HTG. BILL	COMPETITIVE FUEL
NEW ENGLAND							
CONNECTICUT							
SOUTHERN CONNECTICUT GAS CO.	BRIDGEPORT	$7.96	$5.56	$21.98	$13.32	$673.42	FUEL OIL
NORTHEAST UTILITIES	WATERBURY	$7.58	$5.91	$25.79	$11.35	$525.29	FUEL OIL
CONNECTICUT NATURAL GAS	HARTFORD	$6.79	$5.92	$20.90	$8.22	$570.44	FUEL OIL
MAINE							
NORTHERN UTILITIES	PORTLAND	$6.85	$6.01	$23.45	$10.37	$609.65	FUEL OIL
MASSACHUSETTS							
FALL RIVER GAS CO.	FALL RIVER	$4.80	$5.68	$23.45	NA	$480.00	FUEL OIL
BOSTON GAS CO.	BOSTON	$6.90	$6.02	$22.75	$9.61	$731.40	FUEL OIL
COMMONWEALTH GAS CO.	WORCESTER	$6.71	$5.80	$22.86	$11.34	$805.20	FUEL OIL
BAY STATE GAS CO.	BROCKTON	$6.14	$5.54	$22.57	$10.37	$546.46	FUEL OIL
COLONIAL GAS CO.	CAPE COD	$6.92	$5.81	$28.72	$12.55	$588.20	ELECTRICITY
ESSEX COUNTY GAS CO.	HAVERHILL	$6.70	$5.48	NA	$10.48	$750.40	FUEL OIL
LOWELL GAS CO.	LOWELL	$6.83	$4.64	$26.38	$11.35	$648.85	FUEL OIL
NEW HAMPSHIRE							
NORTHERN UTILITIES	PORTSMOUTH	$6.02	$6.01	$26.38	$10.37	$535.78	FUEL OIL
RHODE ISLAND							
PROVIDENCE GAS CO.	PROVIDENCE	$6.42	$5.79	$23.51	$11.35	$577.71	FUEL OIL
VALLEY GAS CO.	PAWTUCKET	$5.94	$6.21	$29.31	$10.92	$445.43	FUEL OIL
VERMONT							
VERMONT GAS SYSTEMS	BURLINGTON	$5.85	$5.68	$23.74	$8.95	$585.00	FUEL OIL
NEW ENGLAND DIVISION		$6.85	$5.50	$23.64	$10.72	$584.31	
MIDDLE ATLANTIC							
NEW JERSEY							
SOUTH JERSEY GAS CO.	ATLANTIC CITY	$5.89	$5.41	$26.99	NA	$450.00	FUEL OIL
ELIZABETHTOWN GAS CO.	ELIZABETH	$5.57	$5.68	$24.30	$9.83	$479.02	FUEL OIL
NEW JERSEY NATURAL GAS COMPANY	ASBURY PARK	$8.17	$5.94	$23.94	$10.59	$762.63	FUEL OIL
PUBLIC SERVICE ELECTRIC & GAS	NEWARK	$4.86	$6.15	$17.29	NA	$509.88	FUEL OIL
NEW YORK							
ST. LAWRENCE GAS CO.	MASSENA	$4.38	$4.68	$14.07	NA	$586.92	FUEL OIL
LONG ISLAND LIGHTING CO.	LONG BEACH	$6.01	$6.55	$24.24	NA	$945.05	FUEL OIL
CONSOLIDATED EDISON CO.	NEW YORK CITY	$6.85	$5.91	$38.13	NA	$856.25	FUEL OIL
COLUMBIA GAS OF NEW YORK	BINGHAMTON	$5.03	$5.38	$26.85	$7.41	$503.00	FUEL OIL
CENTRAL HUDSON GAS & ELECTRIC	POUGHKEEPSIE	$6.77	$4.34	$27.86	$11.24	$412.97	FUEL OIL
BROOKLYN UNION GAS CO.	NEW YORK CITY	$6.92	$6.08	$20.52	NA	$671.24	FUEL OIL
ORANGE & ROCKLAND UTILITIES	PEARL RIVER	$5.61	$5.05	$30.82	$5.03	$623.19	FUEL OIL
NIAGARA MOHAWK POWER CO.	SYRACUSE	$5.66	$5.34	$23.39	$13.86	$525.25	FUEL OIL
ROCHESTER GAS & ELECTRIC	ROCHESTER	$5.44	$5.34	$21.81	$9.93	$511.90	ELECTRICITY
NATIONAL FUEL GAS DIST.	BUFFALO	$5.89	$5.54	$19.41	$9.72	$563.67	FUEL OIL
PENNSYLVANIA							
PENNSYLVANIA GAS & WATER	WILKES-BARRE	$6.35	$5.08	$25.50	$12.55	$876.30	ELECTRICITY
COLUMBIA GAS OF PA	PITTSBURGH	$5.51	$5.38	$25.53	$7.41	$539.98	ELECTRICITY
PIKE COUNTY LIGHT & POWER	MATAMORAS	$4.09	$3.72	$22.51	$5.03	$409.35	FUEL OIL
UGI CORPORATION	READING	$5.42	$5.26	$24.03	$10.37	$477.50	FUEL OIL
NATIONAL FUEL GAS DIST.	ERIE	$4.95	$4.79	$19.72	$8.40	$511.83	ELECTRICITY
PHILADELPHIA GAS WORKS	PHILADELPHIA	$6.96	$6.35	$19.64	$12.01	$786.48	FUEL OIL
PEOPLES NATURAL GAS CO.	PITTSBURGH	$5.38	NA	$22.19	NA	$484.20	ELECTRICITY
PHILADELPHIA ELECTRIC CO.	PHILADELPHIA	$6.42	$5.88	$21.31	$14.30	$577.80	ELECTRICITY
EQUITABLE RESOURCES	PITTSBURGH	$5.99	$3.74	$20.52	$3.14	$594.21	ELECTRICITY
NORTH PENN GAS CO.	RURAL	$4.82	$5.64	$23.15	$10.15	$400.23	FUEL OIL
MIDDLE ATLANTIC DIVISION		$5.91	$5.65	$22.13	$10.03	$609.32	
EAST NORTH CENTRAL							
ILLINOIS							
NORTHERN ILLINOIS GAS CO.	ROCKFORD	$3.80	$5.97	$14.04	$6.59	$467.40	ELECTRICITY
ILLINOIS POWER CO.	DECATUR	$5.75	$3.05	$14.65	$7.50	$459.36	ELECTRICITY
UNITED CITIES GAS CO.	HARRISBURG	$5.21	$4.54	$17.58	$7.10	NA	ELECTRICITY
NORTH SHORE GAS CO.	WAUKEGAN	$4.16	$6.20	$14.80	NA	$599.04	ELECTRICITY
IOWA-ILLINOIS GAS & ELECTRIC	ROCK ISLAND	$4.06	$5.34	$20.69	$5.90	$345.91	PROPANE
PEOPLES GAS LIGHT & COKE	CHICAGO	$4.63	$6.29	$15.42	NA	$680.61	ELECTRICITY
INDIANA							
KOKOMO GAS & FUEL CO.	KOKOMO	$5.88	$4.01	$15.53	$6.55	$560.36	ELECTRICITY
CITIZENS GAS & COKE	INDIANAPOLIS	$5.20	$5.01	$10.84	$6.77	$478.40	ELECTRICITY
LAWRENCEBURG GAS CO.	LAWRENCEBURG	$5.42	$5.01	NA	$8.73	$542.00	ELECTRICITY
NORTHERN INDIANA PUBLIC SERVICE	FORT WAYNE	$5.71	$4.83	$18.47	$7.43	$548.37	NA
OHIO VALLEY GAS CORP.	PORTLAND	$4.36	$5.01	$17.58	$7.64	$457.80	ELECTRICITY

APPENDIX 2 -- COMPETITIVE FUEL PRICES

DIVISION / STATE	COMPANY	PRINCIPAL CITY SERVED	AS OF DECEMBER 31, 1988 NATURAL GAS	FUEL OIL	ELECTRIC	PROPANE PRICE	GAS HTG. BILL	COMPETITIVE FUEL
	INDIANA GAS CO.	CLARKSVILLE	$6.29	$4.81	$13.41	$7.64	$565.47	ELECTRICITY
MICHIGAN								
	MICHIGAN CONSOLIDATED GAS	DETROIT	$5.22	$5.66	$29.31	$7.81	$574.20	FUEL OIL
	MICHIGAN GAS CO.	HOLLAND	$5.62	$5.09	$17.22	$8.37	$521.41	FUEL OIL
	WISCONSIN PUBLIC SERVICE	MENOMINEE	$4.82	$4.89	$18.64	$6.90	$438.89	NA
	CONSUMERS POWER CO.	FLINT	$5.53	$5.48	$18.17	$8.62	$460.65	FUEL OIL
	MICHIGAN GAS UTILITIES CO.	MONROE	$4.40	$5.60	$21.95	$6.99	$411.28	FUEL OIL
OHIO								
	CINCINNATI GAS & ELECTRIC	CINCINNATI	$4.50	$5.01	$13.24	$8.73	$450.00	ELECTRICITY
	DAYTON POWER & LIGHT	DAYTON	$4.84	$5.58	$16.99	$9.90	$428.37	FUEL OIL
	EAST OHIO GAS CO.	CLEVELAND	$6.27	$5.48	$29.31	$9.28	$626.54	ELECTRICITY
	NATIONAL GAS & OIL CORP.	NEWARK	$5.56	NA	NA	NA	$367.52	PROPANE
	WEST OHIO GAS CO.	LIMA	$5.18	$5.28	$19.05	$7.64	$496.44	ELECTRICITY
	COLUMBIA GAS OF OHIO	COLUMBUS	$5.61	$5.38	$24.15	$7.41	$532.95	ELECTRICITY
	OHIO GAS CO.	BRYAN	$5.93	$5.48	$23.45	$7.42	$474.40	ELECTRICITY
WISCONSIN								
	WISCONSIN GAS CO.	MILWAUKEE	$6.09	$5.27	$18.96	$7.75	$584.54	FUEL OIL
	WISCONSIN SOUTHERN GAS CO.	LAKE GENEVA	$4.99	$5.14	$19.64	$6.99	$439.03	ELECTRICITY
	WISCONSIN PUBLIC SERVICE	GREEN BAY	$5.33	$4.89	$18.64	$6.90	$485.39	NA
	WISCONSIN FUEL & LIGHT CO.	WAUSAU	$6.06	$5.28	$17.06	$7.10	$544.79	FUEL OIL
	WISCONSIN NATURAL GAS CO.	RACINE	$5.99	$4.99	$18.55	$6.86	$624.76	FUEL OIL
	SUPERIOR WATER, LIGHT & POWER	SUPERIOR	$5.62	$5.32	$18.17	$8.83	$746.87	FUEL OIL
	MADISON GAS & ELECTRIC	MADISON	$6.03	$5.28	$18.08	$6.55	$458.28	FUEL OIL
	WISCONSIN POWER & LIGHT CO.	JANESVILLE	$6.22	$4.90	$18.20	$7.34	$503.52	PROPANE
EAST NORTH CENTRAL DIVISION			$5.26	$5.40	$19.78	$7.76	$534.94	
WEST NORTH CENTRAL								
IOWA								
	CEDAR FALLS UTILITIES	CEDAR FALLS	$4.78	$4.48	$16.12	$4.48	$542.53	PROPANE
	IOWA-ILLINOIS GAS & ELECTRIC	DAVENPORT	$3.86	$5.34	$18.32	$5.90	$308.80	PROPANE
	IOWA PUBLIC SERVICE CO.	SIOUX CITY	$5.34	$3.12	$13.77	NA	$454.97	PROPANE
	IOWA ELECTRIC LIGHT & POWER	MUSCATINE	$4.28	$4.41	$18.90	$5.56	$473.52	PROPANE
KANSAS								
	MIDWEST ENERGY, INC.	HAYS	$3.81	NA	$17.44	$4.26	$369.35	ELECTRICITY
	KPL GAS SERVICE	WICHITA-TOPEKA	$4.36	$2.74	$27.26	$5.90	$392.40	ELECTRICITY
	ARKANSAS LOUISIANA GAS CO.	WICHITA	$3.58	$3.67	$30.77	$4.37	$205.49	ELECTRICITY
	KN ENERGY	COLBY	$3.17	NA	NA	NA	$253.20	ELECTRICITY
MINNESOTA								
	MINNEGASCO, INC.	MINNEAPOLIS	$4.73	$5.01	$18.17	$7.64	$614.90	ELECTRICITY
	IOWA PUBLIC SERVICE CO.	COON RAPIDS	$4.86	$5.01	NA	$5.57	$402.89	PROPANE
	CITY OF DULUTH	DULUTH	$4.75	$5.34	$15.39	$9.28	$665.00	FUEL OIL
	AUSTIN UTILITIES	AUSTIN	$4.18	$5.80	$21.19	$5.45	$522.50	PROPANE
	NORTHERN STATES POWER CO.	ST. PAUL	$4.74	$5.54	$15.06	$7.21	$480.21	PROPANE
MISSOURI								
	ASSOCIATED NATURAL GAS CO.	SIKESTON	$4.95	NA	$28.37	$8.72	$331.65	ELECTRICITY
	CITY OF SPRINGFIELD	SPRINGFIELD	$3.83	$4.34	$13.59	$5.34	$295.06	ELECTRICITY
	KPL GAS SERVICE	KANSAS CITY	$3.89	$2.81'	$24.91	$5.68	$350.10	ELECTRICITY
	LACLEDE GAS CO.	ST. LOUIS	$4.42	$5.62	$13.96	$7.52	$310.73	ELECTRICITY
NEBRASKA								
	HASTINGS UTILITIES	HASTINGS	$4.58	NA	$20.52	NA	NA	NA
	IOWA PUBLIC SERVICE CO.	SOUTH SIOUX CITY	$5.11	$3.12	NA	NA	$387.85	PROPANE
	KPL GAS SERVICE	FALLS CITY	$5.06	$2.74	$21.98	$6.00	$455.40	ELECTRICITY
	NORTHWESTERN PUBLIC SERVICE	GRAND ISLAND	$4.43	$2.81	$8.35	$3.82	$345.54	ALL
	MINNEGASCO, INC.	LINCOLN	$5.08	$4.94	$12.90	$7.42	$335.28	ELECTRICITY
	METROPOLITAN UTILITIES DISTRICT	OMAHA	$4.15	$5.68	$10.90	$4.69	$310.87	ELECTRICITY
	KN ENERGY	SCOTTSBLUFF	$4.49	NA	NA	NA	$349.99	ELECTRICITY
NORTH DAKOTA								
	MONTANA-DAKOTA UTILITIES CO.	BISMARK	$5.04	$4.21	$17.88	$5.24	$435.21	ELECTRICITY
SOUTH DAKOTA								
	NORTHWESTERN PUBLIC SERVICE	ABERDEEN	$4.46	$2.67	$8.50	$3.28	$392.48	ALL
	MONTANA-DAKOTA UTILITIES CO.	RAPID CITY	$5.26	$3.93	$12.90	$6.55	$333.48	ELECTRICITY
	IOWA PUBLIC SERVICE CO.	YANKTON	$4.70	$3.12	$15.36	NA	$383.05	PROPANE
	MINNEGASCO, INC.	SIOUX FALLS	$4.70	$4.54	$18.17	$7.10	$380.70	ELECTRICITY
WEST NORTH CENTRAL DIVISION			$4.46	$4.28	$18.75	$6.45	$389.36	
SOUTH ATLANTIC								
DELAWARE								
	DELMARVA POWER & LIGHT CO.	WILMINGTON	$6.23	NA	$15.06	NA	NA	FUEL OIL

APPENDIX 2 -- COMPETITIVE FUEL PRICES

DIVISION / STATE	COMPANY	PRINCIPAL CITY SERVED	AS OF DECEMBER 31, 1988 NATURAL GAS	FUEL OIL	ELECTRIC	PROPANE PRICE	GAS HTG. BILL	COMPETITIVE FUEL
	CHESAPEAKE UTILITIES CORP.	DOVER	$5.20	$5.74	$21.69	$10.04	$462.80	ELECTRICITY
DIST. OF COLUMBIA								
	WASHINGTON GAS LIGHT CO.	WASHINGTON	$7.59	$6.61	$20.43	$14.13	$698.28	ELECTRICITY
FLORIDA								
	PEOPLES GAS SYSTEM, INC.	MIAMI	$5.66	$6.61	$22.27	$12.01	$141.45	ELECTRICITY
GEORGIA								
	UNITED CITIES GAS CO.	COLUMBUS	$5.66	$5.01	$16.12	$8.19	NA	ELECTRICITY
	ATLANTA GAS LIGHT COMPANY	ATLANTA	$6.58	$5.21	$19.34	$8.52	$302.68	ELECTRICITY
MARYLAND								
	WASHINGTON GAS LIGHT CO.	HYATTSVILLE	$5.97	$6.61	$13.34	$14.13	$515.81	ELECTRICITY
	BALTIMORE GAS & ELECTRIC	BALTIMORE	$5.50	$5.61	$18.26	$5.98	$462.68	ELECTRICITY
	COLUMBIA GAS OF MD	CUMBERLAND	$6.21	$5.38	$19.84	$7.41	$546.48	ELECTRICITY
NORTH CAROLINA								
	PIEDMONT NATURAL GAS CO.	CHARLOTTE	$5.94	$5.61	$19.34	$10.15	$475.87	ELECTRICITY
	PUBLIC SERVICE OF NORTH CAROLINA	RALEIGH	$5.90	$4.81	$21.98	$8.52	$479.09	ELECTRICITY
	CITY OF WILSON	WILSON	$5.91	$4.67	$19.86	$7.74	$391.33	FUEL OIL
	NORTH CAROLINA NATURAL GAS	FAYETTVILLE	$5.46	$5.34	$21.98	$8.84	$365.82	ELECTRICITY
SOUTH CAROLINA								
	UNITED CITIES GAS CO.	GAFFNEY	$5.00	$4.94	$16.12	$10.04	NA	ELECTRICITY
	PIEDMONT NATURAL GAS CO.	GREENVILLE	$6.30	$5.61	$21.68	$10.15	$464.57	ELECTRICITY
	PEOPLES GAS CO. OF S.C.	FLORENCE	$7.84	$5.95	$20.46	$9.39	NA	ELECTRICITY
	COMMISSIONERS OF PUBLIC WORKS	GREENWOOD	$5.06	$5.67	$20.02	$12.88	$253.00	ELECTRICITY
VIRGINIA								
	UNITED CITIES GAS CO.	BRISTOL	$4.93	$4.81	$14.65	$9.81	NA	ELECTRICITY
	WASHINGTON GAS LIGHT CO.	ALEXANDRIA	$6.75	$6.61	$16.53	$14.13	$540.68	ELECTRICITY
	CITY OF RICHMOND	RICHMOND	$5.55	$5.44	$21.98	$9.92	$302.48	ELECTRICITY
	COLUMBIA GAS OF VA	STAUNTON	$5.40	$5.38	$21.10	$7.88	$421.20	ELECTRICITY
	CITY OF DANVILLE	DANVILLE	$4.84	$6.09	$12.57	$9.22	$400.02	ELECTRICITY
	VIRGINIA NATURAL GAS	NORFOLK	$7.60	$5.61	$17.00	$9.50	$356.98	ELECTRICITY
	ROANOKE GAS CO.	ROANOKE	$4.94	$5.54	$15.21	$8.19	NA	ELECTRICITY
WEST VIRGINIA								
	HOPE GAS CO.	PARKERSBURG	$5.77	$4.01	$17.00	$6.99	$438.44	ELECTRICITY
	MOUNTAINEER GAS CO.	CHARLESTON	$5.21	$5.08	$17.00	$15.07	$521.00	ELECTRICITY
SOUTH ATLANTIC DIVISION			$6.24	$5.29	$18.68	$9.50	$365.04	
EAST SOUTH CENTRAL								
ALABAMA								
	CITY OF FLORENCE	FLORENCE	$5.46	$4.68	$16.91	$8.30	NA	ELECTRICITY
	ALABAMA GAS CORP.	BIRMINGHAM	$5.22	NA	$15.91	$9.28	$271.44	ELECTRICITY
	DECATUR UTILITIES	DECATUR	$3.74	$4.21	$15.44	$8.19	$183.20	ELECTRICITY
	CITY OF HUNTSVILLE	HUNTSVILLE	$4.51	$5.74	$15.06	$7.10	$451.40	NA
	SOUTHEAST ALABAMA GAS	ANDALUSIA	$6.08	$3.87	$21.98	$8.19	$398.24	ELECTRICITY
KENTUCKY								
	DELTA NATURAL GAS CO.	WINCHESTER	$5.42	$5.21	$16.12	$8.73	$352.30	ELECTRICITY
	UNION LIGHT, HEAT & POWER	COVINGTON	$4.62	$5.01	$12.28	$8.73	$462.00	ELECTRICITY
	LOUISVILLE GAS & ELECTRIC	LOUISVILLE	$3.89	$4.36	$13.36	$9.39	$284.25	ELECTRICITY
	COLUMBIA GAS OF KY	LEXINGTON	$5.19	$5.05	$16.53	$6.14	$435.96	ELECTRICITY
	WESTERN KENTUCKY GAS CO.	OWENSBORO	$3.95	$5.67	$17.21	$8.73	$319.99	ELECTRICITY
MISSISSIPPI								
	MISSISSIPPI VALLEY GAS CO.	NA	$5.50	$4.15	$22.57	$9.28	$356.95	ELECTRICITY
	ENTEX, INC.	GULFPORT	$5.26	$4.15	$17.00	$9.06	$210.90	ELECTRICITY
TENNESSEE								
	MEMPHIS LIGHT, GAS & WATER	MEMPHIS	$3.72	$4.68	$16.12	$7.53	$316.20	PROPANE
	UNITED CITIES GAS CO.	MARYVILLE	$5.51	$6.01	$16.12	$9.81	NA	ELECTRICITY
	MIDDLE TENNESSEE NATURAL GAS	SMITHVILLE	$5.80	$3.94	$15.53	$9.51	$342.20	ELECTRICITY
	NASHVILLE GAS CO.	NASHVILLE	$5.02	$5.34	$17.00	$9.39	$426.70	ELECTRICITY
EAST SOUTH CENTRAL DIVISION			$4.75	$5.11	$16.66	$8.71	$329.18	
WEST SOUTH CENTRAL								
ARKANSAS								
	ARKANSAS WESTERN GAS CO.	FAYETTEVILLE	$4.23	NA	$19.58	$8.52	$232.65	ELECTRICITY
	ARKANSAS LOUISIANA GAS CO.	LITTLE ROCK	$5.05	NA	$20.22	$6.55	$274.22	ELECTRICITY
	ARKANSAS OKLAHOMA GAS CORP.	FORT SMITH	$3.37	NA	$17.58	$7.91	$219.25	ELECTRICITY
	ASSOCIATED NATURAL GAS CO.	BLYTHEVILLE	$4.44	NA	$28.43	$8.72	$247.88	ELECTRICITY
LOUISIANA								
	ENTEX, INC.	LAKE CHARLES	$5.32	$6.28	$18.19	$9.06	$212.80	ELECTRICITY
	ARKANSAS LOUISIANA GAS CO.	SHREVEPORT	$4.65	NA	$18.85	$8.73	$223.20	ELECTRICITY
	TRANS LOUISIANA GAS CO.	LAFAYETTE	$6.09	NA	$21.98	$10.04	$365.28	ELECTRICITY

APPENDIX 2 -- COMPETITIVE FUEL PRICES

DIVISION / STATE	COMPANY	PRINCIPAL CITY SERVED	AS OF DECEMBER 31, 1988 NATURAL GAS	FUEL OIL	ELECTRIC	PROPANE PRICE	GAS HTG. BILL	COMPETITIVE FUEL
	LOUISIANA GAS SERVICE CO.	HARVEY	$6.75	NA	$22.60	NA	$234.23	ELECTRICITY
OKLAHOMA								
	OKLAHOMA NATURAL GAS CO.	OKLAHOMA CITY	$4.77	NA	$10.26	$6.44	$303.37	ELECTRICITY
	ARKANSAS LOUISIANA GAS CO.	LAWTON	$4.90	$5.88	$20.52	$5.46	$247.45	ELECTRICITY
	KPL GAS SERVICE	BARTLESVILLE	$4.62	$2.81	$19.05	$5.46	$415.80	ELECTRICITY
	LONE STAR GAS CO.	DURANT	$4.89	NA	$17.58	$8.73	$220.05	ELECTRICITY
	ARKANSAS OKLAHOMA GAS CORP.	SALLISAW	$5.51	NA	$17.58	$7.91	$283.01	ELECTRICITY
TEXAS								
	LONE STAR GAS CO.	DALLAS	$5.43	NA	$19.05	$8.73	$244.35	ELECTRICITY
	ENTEX, INC.	HOUSTON	$5.78	$4.34	$21.69	$9.06	$184.96	ELECTRICITY
	ENERGAS	LUBBOCK	$3.80	NA	$19.34	$5.34	$246.87	ELECTRICITY
	CITY PUBLIC SERVICE	SAN ANTONIO	$3.05	NA	$15.86	$8.30	$93.36	ELECTRICITY
	ARKANSAS LOUISIANA GAS CO.	TEXARKANA	$4.73	$3.94	$19.05	$7.97	$215.69	ELECTRICITY
WEST SOUTH CENTRAL DIVISION			$5.13	$4.58	$18.55	$7.93	$238.03	
MOUNTAIN								
ARIZONA								
	CITIZENS UTILITIES CO.	NOGALES	$5.95	NA	$23.72	$9.83	$196.35	PROPANE
	SOUTHWEST GAS CORP.	PHOENIX	$9.27	$4.81	$25.35	$9.20	$267.85	ELECTRICITY
COLORADO								
	CITY OF COLORADO SPRINGS	COLORADO SPRINGS	$4.28	NA	$17.53	NA	$209.62	ELECTRICITY
	PUBLIC SERVICE OF COLORADO	DENVER	$3.66	$3.14	$25.33	$2.51	$338.46	ELECTRICITY
	KN ENERGY	YUMA	$4.54	NA	NA	NA	$353.81	ELECTRICITY
IDAHO								
	WASHINGTON WATER POWER	LEWISTON	$4.21	$5.88	$13.37	$9.83	$323.47	ELECTRICITY
	INTERMOUNTAIN GAS CO.	BOISE	$5.40	$4.74	$13.78	$10.92	$298.62	ELECTRICITY
MONTANA								
	MONTANA-DAKOTA UTILITIES CO.	BILLINGS	$5.00	$3.93	$17.58	$5.45	$356.29	ELECTRICITY
	GREAT FALLS GAS CO.	GREAT FALLS	$4.13	$4.41	$16.41	$7.64	$282.91	ELECTRICITY
NEVADA								
	SOUTHWEST GAS CORP.	LAS VEGAS	$6.61	NA	$13.61	$10.81	$315.39	ELECTRICITY
	WESTPAC UTILITLIES	RENO	$5.84	$5.81	$23.68	$11.14	$278.71	FUEL OIL
UTAH								
	MOUNTAIN FUEL SUPPLY CO.	SALT LAKE CITY	$4.24	$3.49	$23.15	$7.49	$329.87	ELECTRICITY
WYOMING								
	KN ENERGY	DOUGLAS	$3.77	NA	NA	NA	$275.14	ELECTRICITY
	MONTANA-DAKOTA UTILITIES CO.	SHERIDAN	$4.64	$4.28	$15.86	$4.91	$370.59	ELECTRICITY
	MOUNTAIN FUEL SUPPLY CO.	ROCK SPRINGS	$4.37	$3.49	$23.15	$7.49	$371.89	ELECTRICITY
MOUNTAIN DIVISION			$4.82	$3.71	$22.61	$9.06	$296.35	
PACIFIC								
CALIFORNIA								
	PACIFIC GAS AND ELECTRIC	SAN FRANCISCO	$4.65	NA	$26.38	$9.61	$195.30	ELECTRICITY
	SAN DIEGO GAS & ELECTRIC	SAN DIEGO	$5.03	NA	$30.25	$12.77	$95.57	ELECTRICITY
	SOUTHWEST GAS CORP.	VICTORVILLE	$4.54	$5.64	$22.48	$11.79	$190.02	PROPANE
	SOUTHERN CALIFORNIA GAS CO.	LOS ANGELES	$5.26	NA	$27.10	NA	$185.71	ELECTRICITY
OREGON								
	NORTHWEST NATURAL GAS CO.	PORTLAND	$5.89	$5.34	$13.29	$9.16	$305.79	ELECTRICITY
WASHINGTON								
	WASHINGTON WATER POWER	SPOKANE	$3.95	$5.88	$12.06	NA	$363.11	ELECTRICITY
	WASHINGTON NATURAL GAS CO.	SEATTLE	$5.62	$6.21	$12.98	NA	$403.52	ELECTRICITY
	NORTHWEST NATURAL GAS CO.	VANCOUVER	$5.36	$5.34	$10.84	$9.16	$254.55	ELECTRICITY
	CASCADE NATURAL GAS CORP.	SEATTLE	$5.92	$5.34	$14.07	$11.46	$296.20	ELECTRICITY
PACIFIC DIVISION			$5.04	$5.76	$25.96	$10.14	$203.11	

APPENDIX 3

HOUSEHEATING UNIT ADDITIONS--1988 ACTUAL AND 1989 ANTICIPATED

Column 1 summarizes househeating unit additions from new construction. Column 2 summarizes total conversions from other heating fuels. Column 3 summarizes unit losses and Column 4 presents the net unit additions.

APPENDIX 3 -- ADDITIONS FROM NEW CONSTRUCTION AND CONVERSIONS

DIVISION / STATE / COMPANY	ADDITIONS FROM NEW CONSTRUCTION 1988	ADDITIONS FROM NEW CONSTRUCTION 1989	TOTAL CONVERSIONS TO GAS 1988	TOTAL CONVERSIONS TO GAS 1989	LESS TOTAL LOSSES 1988	LESS TOTAL LOSSES 1989	NET ADDITIONS 1988	NET ADDITIONS 1989
NEW ENGLAND								
CONNECTICUT								
SOUTHERN CONNECTICUT GAS CO.	2,174	2,000	1,484	1,000	NA	NA	NA	NA
NORTHEAST UTILITIES	3,447	2,775	1,450	1,135	NA	NA	NA	NA
CONNECTICUT NATURAL GAS	2,120	1,800	973	1,000	120	120	2,973	2,680
MAINE								
NORTHERN UTILITIES	150	150	350	350	100	100	400	400
MASSACHUSETTS								
FALL RIVER GAS CO.	NA	NA	560	560	10	10	NA	NA
BAY STATE GAS CO.	3,700	3,000	4,300	3,600	100	100	7,900	6,500
COMMONWEALTH GAS CO.	2,466	1,907	1,726	1,608	NA	NA	NA	NA
ESSEX COUNTY GAS COMPANY	826	800	NA	NA	NA	NA	NA	NA
LOWELL GAS CO.	1,091	900	147	300	45	20	1,193	1,180
BOSTON GAS CO.	3,297	2,802	6,562	6,430	NA	NA	NA	NA
NEW HAMPSHIRE								
NORTHERN UTILITIES	450	350	500	400	100	100	850	650
RHODE ISLAND								
VALLEY GAS CO.	488	250	644	600	31	31	1,101	819
PROVIDENCE GAS CO.	3,090	2,400	772	622	10	10	3,852	3,012
VERMONT								
VERMONT GAS SYSTEMS	522	500	614	570	NA	NA	NA	NA
MIDDLE ATLANTIC								
NEW JERSEY								
SOUTH JERSEY GAS CO.	9,815	10,542	1,733	1,860	NA	NA	NA	NA
PUBLIC SERVICE ELECTRIC & GAS	12,800	14,500	12,356	12,250	NA	NA	NA	NA
ELIZABETHTOWN GAS CO.	2,920	2,900	2,114	2,100	NA	NA	NA	NA
NEW JERSEY NATURAL GAS COMPANY	14,008	11,348	4,507	3,300	NA	NA	NA	NA
NEW YORK								
NATIONAL FUEL GAS DIST.	3,388	3,750	1,384	1,549	NA	NA	NA	NA
CENTRAL HUDSON GAS & ELECTRIC	1,126	1,200	794	810	NA	NA	NA	NA
NIAGARA MOHAWK POWER CO.	5,278	5,000	NA	NA	NA	NA	NA	NA
CONSOLIDATED EDISON CO.	2,724	1,200	2,403	3,000	NA	NA	NA	NA
ROCHESTER GAS & ELECTRIC	2,831	2,700	1,421	NA	NA	NA	NA	NA
COLUMBIA GAS OF NEW YORK	581	470	280	300	87	300	774	470
BROOKLYN UNION GAS CO.	3,100	3,000	4,300	3,500	500	500	6,900	6,000
LONG ISLAND LIGHTING CO.	2,769	3,300	3,064	3,700	NA	NA	NA	NA
ORANGE & ROCKLAND UTILITIES	1,627	1,830	NA	NA	NA	NA	NA	NA
ST. LAWRENCE GAS CO.	30	20	179	196	24	10	185	206
PENNSYLVANIA								
PENNSYLVANIA GAS & WATER	716	900	2,851	3,400	0	0	3,567	4,300
EQUITABLE RESOURCES	1,600	1,630	108	110	1,500	1,538	208	202
COLUMBIA GAS OF PA	3,340	3,410	882	860	1,006	1,200	3,216	3,070
NORTH PENN GAS CO.	291	329	255	265	NA	NA	NA	NA
PHILADELPHIA GAS WORKS	1,600	2,000	1,850	1,900	1,000	1,000	2,450	2,900
UGI CORPORATION	2,447	2,500	2,118	2,367	360	360	4,205	4,507
PEOPLES NATURAL GAS CO.	2,092	1,929	479	698	477	583	2,094	2,044
NATIONAL FUEL GAS DIST.	1,002	1,055	646	725	NA	NA	NA	NA
PHILADELPHIA ELECTRIC CO.	5,252	4,298	2,504	2,000	100	100	7,656	6,198
PIKE COUNTY LIGHT & POWER	13	NA	NA	NA	NA	NA	NA	NA
EAST NORTH CENTRAL								
ILLINOIS								
PEOPLES GAS LIGHT & COKE	2,800	2,500	430	525	1,680	1,650	1,550	1,375
IOWA-ILLINOIS GAS & ELECTRIC	118	100	7	0	24	25	101	75
NORTH SHORE GAS CO.	3,565	3,750	331	400	76	80	3,820	4,070
NORTHERN ILLINOIS GAS CO.	36,984	35,000	1,500	1,300	4,500	4,500	33,984	31,800
INDIANA								
OHIO VALLEY GAS CORP.	103	105	294	607	43	35	354	677
INDIANA GAS CO.	8,389	7,926	NA	NA	NA	NA	NA	NA
KOKOMO GAS & FUEL CO.	176	180	152	160	NA	NA	NA	NA
MICHIGAN								
WISCONSIN PUBLIC SERVICE	20	25	9	10	10	5	19	30
CONSUMERS POWER CO.	19,000	17,500	2,700	2,590	NA	NA	NA	NA
MICHIGAN CONSOLIDATED GAS	12,572	11,300	2,210	NA	4,900	5,000	9,882	NA
MICHIGAN GAS UTILITIES CO.	1,603	1,250	923	NA	NA	NA	NA	NA
MICHIGAN GAS CO.	1,060	978	818	753	7,620	3,636	(5,742)	(1,905)
OHIO								
WEST OHIO GAS CO.	454	150	380	140	23	90	811	200
NATIONAL GAS & OIL CORP.	356	400	NA	NA	NA	NA	NA	NA
COLUMBIA GAS OF OHIO	15,038	13,350	4,221	4,750	2,357	2,500	16,902	15,600
DAYTON POWER & LIGHT	3,388	NA	NA	NA	NA	NA	NA	NA
OHIO GAS CO.	324	350	337	305	44	41	617	614
EAST OHIO GAS CO.	8,055	8,000	2,766	2,900	3,051	NA	7,770	NA

APPENDIX 3 -- ADDITIONS FROM NEW CONSTRUCTION AND CONVERSIONS

DIVISION / STATE	COMPANY	ADDITIONS FROM NEW CONSTRUCTION 1988	ADDITIONS FROM NEW CONSTRUCTION 1989	TOTAL CONVERSIONS TO GAS 1988	TOTAL CONVERSIONS TO GAS 1989	LESS TOTAL LOSSES 1988	LESS TOTAL LOSSES 1989	NET ADDITIONS 1988	NET ADDITIONS 1989
WISCONSIN									
	WISCONSIN FUEL & LIGHT CO.	416	399	311	299	0	0	727	698
	WISCONSIN GAS CO.	2,320	1,860	4,260	3,612	466	NA	6,114	NA
	SUPERIOR WATER, LIGHT & POWER	50	50	113	122	20	20	143	152
	WISCONSIN PUBLIC SERVICE	1,646	1,500	1,350	1,200	25	25	2,971	2,675
	WISCONSIN NATURAL GAS CO.	4,100	4,300	2,878	3,000	NA	NA	NA	NA
	WISCONSIN POWER & LIGHT CO.	989	1,477	1,915	1,097	NA	NA	NA	NA
	MADISON GAS & ELECTRIC	1,298	1,640	699	884	NA	NA	NA	NA
	WISCONSIN SOUTHERN GAS CO.	462	460	768	440	0	0	1,230	900
WEST NORTH CENTRAL									
IOWA									
	IOWA-ILLINOIS GAS & ELECTRIC	1,520	1,000	375	76	134	50	1,761	1,026
	CEDAR FALLS UTILITIES	34	25	25	27	13	0	46	52
KANSAS									
	KPL GAS SERVICE	6,167	6,000	NA	NA	NA	NA	NA	NA
	MIDWEST ENERGY, INC.	20	20	3	NA	9	NA	14	NA
MINNESOTA									
	MINNEGASCO, INC.	13,479	10,690	1,901	825	200	200	15,180	11,315
	AUSTIN UTILITIES	25	NA	10	NA	7	4	28	NA
	CITY OF DULUTH	NA	NA	NA	NA	NA	NA	NA	NA
	NORTHERN STATES POWER CO.	4,400	5,000	1,905	2,900	NA	NA	NA	NA
MISSOURI									
	ASSOCIATED NATURAL GAS CO.	1,525	NA	NA	NA	564	NA	NA	NA
	KPL GAS SERVICE	7,054	7,000	900	1,000	NA	NA	NA	NA
	CITY OF SPRINGFIELD	1,218	NA	NA	NA	NA	NA	NA	NA
	LACLEDE GAS CO.	8,704	NA	660	NA	6,875	NA	2,489	NA
NEBRASKA									
	KPL GAS SERVICE	3	5	NA	NA	NA	NA	NA	NA
	HASTINGS UTILITIES	21	20	NA	NA	34	35	NA	NA
	METROPOLITAN UTILITIES DISTRIC	2,500	2,300	200	200	354	300	2,346	2,200
	NORTHWESTERN PUBLIC SERVICE	20	30	0	0	0	0	20	30
	MINNEGASCO, INC.	985	795	950	200	NA	NA	NA	NA
NORTH DAKOTA									
	MONTANA-DAKOTA UTILITIES CO.	NA	NA	NA	NA	NA	NA	NA	NA
SOUTH DAKOTA									
	MONTANA-DAKOTA UTILITIES CO.	NA	NA	NA	NA	NA	NA	NA	NA
	NORTHWESTERN PUBLIC SERVICE	50	30	0	0	1	0	49	30
	MINNEGASCO, INC.	550	450	350	450	20	20	880	880
SOUTH ATLANTIC									
DELAWARE									
	DELMARVA POWER & LIGHT CO.	1,410	1,800	200	225	100	100	1,510	1,925
	CHESAPEAKE UTILITIES CORP.	477	NA	105	0	6	NA	576	NA
DIST. OF COLUMBIA									
	WASHINGTON GAS LIGHT CO.	130	300	2,510	2,000	1,900	1,800	740	500
FLORIDA									
	PEOPLES GAS SYSTEM, INC.	8,331	6,000	16,903	17,800	627	775	24,607	23,025
GEORGIA									
	ATLANTA GAS LIGHT COMPANY	39,152	41,141	NA	NA	NA	NA	NA	NA
MARYLAND									
	WASHINGTON GAS LIGHT CO.	3,800	4,500	1,700	1,600	1,100	1,000	4,400	5,100
	BALTIMORE GAS & ELECTRIC	976	1,700	615	NA	300	300	1,291	NA
	COLUMBIA GAS OF MD	301	480	106	150	187	170	220	460
NORTH CAROLINA									
	NORTH CAROLINA NATURAL GAS	522	600	1,175	1,350	100	100	1,597	1,850
	CITY OF WILSON	88	85	49	44	NA	NA	NA	NA
	PIEDMONT NATURAL GAS CO.	5,000	5,200	9,200	9,200	710	700	13,490	13,700
	PUBLIC SERVICE OF N.C.	5,011	6,000	3,894	4,400	389	362	8,516	10,038
SOUTH CAROLINA									
	PIEDMONT NATURAL GAS CO.	900	1,000	2,800	2,900	300	300	3,400	3,600
	COMMISSIONERS OF PUBLIC WORKS	75	100	75	125	25	25	125	200
VIRGINIA									
	VIRGINIA NATURAL GAS	5,552	5,000	842	850	95	75	6,299	5,775
	CITY OF DANVILLE	91	225	64	95	20	20	135	300
	COLUMBIA GAS OF VA	1,473	1,000	434	450	51	40	1,856	1,410
	WASHINGTON GAS LIGHT CO.	7,800	10,500	1,800	1,800	900	900	8,700	11,400
WEST VIRGINIA									
	HOPE GAS CO.	790	800	46	50	66	66	770	784
EAST SOUTH CENTRAL									
ALABAMA									
	CITY OF HUNTSVILLE	200	NA	215	247	202	110	213	NA
	DECATUR UTILITIES	377	300	23	38	9	11	391	327

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DIVISION / STATE	COMPANY	ADDITIONS FROM NEW CONSTRUCTION 1988	ADDITIONS FROM NEW CONSTRUCTION 1989	TOTAL CONVERSIONS TO GAS 1988	TOTAL CONVERSIONS TO GAS 1989	LESS TOTAL LOSSES 1988	LESS TOTAL LOSSES 1989	NET ADDITIONS 1988	NET ADDITIONS 1989
	CITY OF FLORENCE	115	125	229	240	34	34	310	331
	ALABAMA GAS CORP.	3,587	3,200	1,727	1,960	2,200	2,200	3,114	2,960
KENTUCKY									
	WESTERN KENTUCKY GAS CO.	835	1,000	NA	NA	NA	NA	NA	NA
	COLUMBIA GAS OF KY	1,591	1,790	200	490	358	800	1,433	1,480
MISSISSIPPI									
	MISSISSIPPI VALLEY GAS CO.	1,350	1,500	806	870	217	205	1,939	2,165
	ENTEX, INC.	1,200	1,400	333	200	1,647	200	(114)	1,400
TENNESSEE									
	MIDDLE TENNESSEE NATURAL GAS	1,000	600	1,130	900	40	50	2,090	1,450
	NASHVILLE GAS CO.	3,300	NA	NA	NA	NA	NA	NA	NA
WEST SOUTH CENTRAL									
ARKANSAS									
	ARKANSAS WESTERN GAS CO.	979	NA	NA	NA	NA	NA	NA	NA
	ASSOCIATED NATURAL GAS CO.	592	NA	NA	NA	441	NA	NA	NA
LOUISIANA									
	TRANS LOUISIANA	217	250	72	115	NA	NA	NA	NA
	ENTEX, INC.	300	102,650	108	170	545	370	(137)	102,450
OKLAHOMA									
	OKLAHOMA NATURAL GAS CO.	6,574	8,000	475	600	0	0	7,049	8,600
	KPL GAS SERVICE	123	130	NA	NA	NA	NA	NA	NA
TEXAS									
	LONE STAR GAS CO.	10,749	9,500	361	308	NA	NA	NA	NA
	CITY PUBLIC SERVICE	0	0	0	0	2,444	1,188	(2,444)	(1,188)
	ENTEX, INC.	9,200	9,600	775	820	4,220	3,010	5,755	7,410
	ARKANSAS LOUISIANA GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
	ENERGAS	1,038	900	426	360	107	130	1,357	1,130
MOUNTAIN									
ARIZONA									
	CITIZENS UTILITIES CO.	130	100	0	0	0	0	130	100
	SOUTHWEST GAS CORP.	5,520	7,500	894	1,250	3,075	3,300	3,339	5,450
COLORADO									
	CITY OF COLORADO SPRINGS	1,120	1,604	NA	NA	NA	NA	NA	NA
	PUBLIC SERVICE OF COLORADO	8,601	9,087	NA	NA	NA	NA	NA	NA
IDAHO									
	INTERMOUNTAIN GAS CO.	1,472	1,391	1,045	1,134	251	NA	2,266	NA
	WASHINGTON WATER POWER	NA	NA	NA	NA	NA	NA	NA	NA
MONTANA									
	MONTANA-DAKOTA UTILITIES CO.	NA	NA	NA	NA	NA	NA	NA	NA
	GREAT FALLS GAS CO.	100	100	78	90	51	50	127	140
NEVADA									
	WESTPAC UTILITIES	2,075	NA	600	800	100	150	2,575	NA
	SOUTHWEST GAS CORP.	5,518	5,700	1,311	1,170	49	60	6,780	6,810
NEW MEXICO									
	GAS COMPANY OF NEW MEXICO	4,902	NA	472	NA	NA	NA	NA	NA
UTAH									
	MOUNTAIN FUEL SUPPLY CO.	9,752	7,014	2,023	4,326	NA	NA	NA	NA
WYOMING									
	MOUNTAIN FUEL SUPPLY CO.	477	10	NA	NA	NA	NA	NA	NA
	MONTANA-DAKOTA UTILITIES CO.	NA	NA	NA	NA	NA	NA	NA	NA
PACIFIC									
CALIFORNIA									
	SAN DIEGO GAS AND ELECTRIC	20,488	21,855	0	0	0	0	20,488	21,855
	SOUTHERN CALIFORNIA GAS CO.	118,659	99,820	1,100	1,000	NA	NA	NA	NA
	SOUTHWEST GAS CORP.	5,437	6,000	140	205	3	3	5,574	6,202
	PACIFIC GAS AND ELECTRIC	80,000	100,000	0	0	0	0	80,000	100,000
OREGON									
	NORTHWEST NATURAL GAS CO.	4,823	4,550	5,979	6,200	2,929	2,800	7,873	7,950
WASHINGTON									
	CASCADE NATURAL GAS CORP.	1,467	1,760	3,786	4,550	448	NA	4,805	NA
	NORTHWEST NATURAL GAS CO.	250	250	310	250	0	30	560	470
	WASHINGTON NATURAL GAS CO.	10,315	10,300	11,038	14,165	885	885	20,468	23,580
	WASHINGTON WATER POWER	550	600	550	600	NA	NA	NA	NA